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MEETING OF THE TRADE.

We beg to call attention to Mr. Buott's letter, announcing that a meeting of the trade will be held at the New Offices of the United Society on the afternoon of the 27th instant. Mr. Alderman Dakin, the President of the Society, will occupy the chair. We trust that this meeting will be well attended, and that the Executive of the United Society will be encouraged in their efforts to resist the introduction of the proposed New Medical Act. Reports of the influential meetings which have taken place in the country will be found in our news pages.

THE PARAFFIN WORKS, BATHGATE.

BY W. B. TEGETMEIER.

About fifteen or sixteen years since, a thick, dirty-looking oily fluid was observed flowing from the cracks in the sandstone roof of a coal-mine at Alfreton, Derbyshire. The attention of Mr. James Young was directed to the circumstance by Dr. Lyon Playfair, and he made a number of experiments with a view of utilizing this liquid. These experiments resulted in the establishment of a factory for the production of lubricating and burning oils. After a short period, however, the supply failed, and the manufacture necessarily came to an end. This untoward termination led Mr. Young to reflect on the causes which had produced this natural petroleum, and to endeavour to ascertain whether it could not be obtained artificially. From its situation in the sandstone above the coal, Mr. Young was led to the conclusion that its production was dependent on the natural distillation of the coal by subterranean heat; and on investigation he found that by distilling coal at a low temperature, he obtained an oily liquid in large quantity. For the protection of this discovery he took out a patent, and immediately proceeded to establish works at Bathgate, Linlithgowshire—this locality having been selected on account of the existence of the Boghead Coal-mines in the immediate neighbourhood. From this small beginning there has rapidly been developed one of the largest chemical factories in the kingdom, with works covering twenty-five acres of ground, and furnishing lucrative employment to upwards of 600 men.

The establishment of this factory furnishes a convincing reply to those pseudo-philanthropists who bewail the decline of simple pursuits requiring unskilled labour, and think that the development of the manufacturing over the agricultural system is the bane of the country. When the Paraffin Works were first established at Bathgate, the village was chiefly occupied by hand-loom weavers, whose average earnings amounted to about 6*s.* per week. These weavers have now become the intelligent workmen of the factory, their earnings having been trebled by the change; and even the unskilled labourers receive more than double the previous average earnings of the district.

The Paraffin Works are situated about a mile from the Bathgate Station on one of the railways which connect Edinburgh and Glasgow. From the numerous chimneys and the smoke arising from the many furnaces required for the distillation of the oil, the whole place forcibly reminds the spectator of the "black country" around Birmingham, an illusion that the smoke-begrimed appearance of the workers materially tends to strengthen.

The Boghead coal, as it is brought to the works, is a dull, hard cannel coal, in masses of considerable size. It is requisite, in the first instance, that these should be broken into small fragments capable of being conveniently introduced into the retorts, and being readily and uniformly acted upon by heat. To accomplish this, the blocks are thrown between two revolving toothed cylinders, constructed on the same principle as those of a bone-mill. As these turn round, the teeth crush the hard masses of coal with a horrid scrunching noise which makes one shudder to think of the inevitable fate of workmen falling between them. This, however, is a contingency that cannot happen; for the opening into which the coal is thrown is purposely made so small, that such an accident is impossible.

On passing down to a lower level, the crushed coal is seen falling out from between the rollers, and a small stream of water may be observed playing over it, to prevent, as as far as practicable, the inhalation of the dust by the workmen.

The crushed coal is then laden into large barrows, which are immediately run upon a hoist that raises them to a level with the tops of the retorts. Arrived at this point, a self-acting break prevents their return.

The retorts for distilling the coal are perpendicular tubes eleven feet in height, four of them constituting a set. These are built into one furnace, and charged by a single workman. The upper ends of the retorts, which project considerably above the platform formed by the top of the furnaces, are each closed by a conical hopper resembling a common funnel without its narrow tube; the opening of the hopper into the retort is closed by a spherical valve, which is suspended in the retort and pulled up against the opening by a chain worked by a counterpoise. This simple contrivance is rendered sufficiently air-tight by a handful of sand being thrown into the hopper. When it is wished to re-charge the retort, the workman fills the hopper with the broken coal, and then depressing the iron chain, lowers the spherical valve, when the contents of the hopper fall into the retort, the opening being immediately closed again and luted by a fresh handful of sand. From the construction of the retort, the coal is gradually heated as it descends to that part of the tube which passes through the furnace.

On passing down from the elevated platform formed by the range of furnaces, we arrive at the bottom of the upright retorts. These pass completely through the furnaces, and are closed below by dipping into shallow pools of water, that form air-tight joints. The advantage of this arrangement is evident: the spent coal from which the oil has been driven off as it passes through the hot part of the retort gradually descends into the water, and is from time to time raked away below, the coal from above descending as it is removed. Thus the action of these retorts is continuous, and the distillation goes on uninterruptedly both night and day. The waste refuse or spent coal from the retorts consists of about one-half carbon, the remainder being mineral matter. As it is not well adapted for fuel nor utilized in any way, it accumulates in enormous mounds that cover several acres near the works. One of these accidentally caught fire some time since, and continued smouldering for more than twelve months before it burnt itself out. The vapours which are produced in the retorts are all conducted by iron tubes to the main condensers. These, like the ordinary condensers in coal-gas works, consist of a series of iron syphon pipes freely exposed to the air. In passing through these pipes, the vapours condense into liquid, a very inconsiderable portion escaping into a gas-holder as incondensible gas.

It is this result, so different from that obtained in the ordinary gas-works, that marks the great value of Mr. Young's process. In the gas-works, a high temperature resolves the coal into incondensible gas and coal tar, the latter being a liquid heavier than water. In the Paraffin Works, a comparatively low temperature, gradually applied, furnishes an inflammable oil lighter than water, with so small a portion of incondensible gas that practically it is of little consideration.

The crude oil produced in the numerous stacks of furnaces by the distillation of the Boghead coal is conveyed by means of iron pipes to a general reservoir: this is a brick tank sunk in the ground, and capable of containing 40,000 gallons. This crude oil is a mixture of various substances, some of which are very volatile, and give off inflammable vapours even at the ordinary temperature of the atmosphere. In order to guard against fire, this tank is covered by a low sheet-iron roof, in the gable ends of which are two iron doors: these are not hinged, but drop like an ancient portcullis, being held open by long iron bars, so that should the liquid in the tank become ignited by any accident, the workmen, by pulling away the iron supporting rods, could drop the doors, and so enclose the ignited oil in an air-tight chamber; and, as if to make assurance doubly sure, a pipe from one of the largest steam-boilers in the works is carried through the roof, and a jet of steam can thus, at a minute's notice, be caused to play on the surface of the oil and assist in extinguishing the combustion.

In this the more open part of the works are situated the tanks for the storing of the refined oil. These are circular iron vessels, covered with conical roofs; in size they greatly surpass the neighbouring cottages, and present somewhat the appearance of ordinary gasometers, without the surrounding framework. These tanks were constructed in the first instance of cast-iron plates connected by screws passing through the broad flanges surrounding each plate. So great, however, is the penetrative or diffusive power of the paraffin oil, that it is found impossible to render the joints tight by screws, consequently riveted wrought-iron tanks are now employed as reservoirs. Each of these tanks is capable of holding about 100,000 gallons of oil. At the time of my visit the aggregate quantity of oil in stock amounted to about 1,000,000 gallons,—a quantity sufficient to dispel the darkness in many hundreds of thousands of homes during the ensuing winter.

The crude oil as first obtained from the coal is a dark-coloured thick liquid, containing all the products of its destructive distillation. The first process of purification it undergoes is simple distillation. This is performed in cylindrical iron stills of enormous size, weighing about five tons each; in these it is distilled to dryness, the superabundant carbon that it contains being left in the form of a shining black coke. As it is necessary to clear out this coke after each distillation, the retorts are made to open at the end, so as to admit of its removal. The coke, which is as nearly as possible pure carbon, is employed as fuel in some of the numerous furnaces of the works. From the necessity of heating these stills to redness in order to drive off the whole of the oil, they are subject to a great amount of wear and tear: consequently, the cost of their replacement and repair constitutes an important item in the working expenses of the factory.

The vapour arising from these stills is cooled by being conducted along iron pipes passing through large open tanks sunk in the ground. These tanks have a very small stream of water flowing through them, which answers the purpose of keeping the pipes cool, the specific heat of the paraffin oil vapour being very small, and consequently requiring but a moderate amount of cold water to condense it into the liquid state.

When this first purification by simple distillation has been effected, the oil is further purified by being acted on by strong oil of vitriol, or sulphuric acid. As this, from its corrosive action, is a dangerous and, therefore, expensive material to convey, it is found more economical to produce it on the spot. Consequently, the Bathgate Works include a complete apparatus for its manufacture: there are furnaces in which large quantities of sulphur are burned; vast leaden chambers, in which the fumes, mixed with those arising from nitre, are condensed into the liquid acid; and huge glass evaporating pans bedded in sand, in which the produce is concentrated by heat until it attains the required strength, which is indicated by the specific gravity of 1·848.

In order to insure an adequate mixture of the paraffin oil and the sulphuric acid required to purify it, both are allowed to flow in the requisite proportions into circular tanks. Each of these contains a revolving stirrer, which throws the whole into great commotion, and causes the intimate mixture of the two liquids, spite of their different specific gravities, the acid being double the weight of the oil. This admixture is continued for about four hours, when the combined fluids assume a beautiful opaque green appearance. On being allowed to rest, the impurities, which are charred and separated by the action of the oil of vitriol, subside to the bottom in the form of a dense, black, heavy acid tar. As this is not turned to any practical use, it is requisite to get rid of it in some way, as it cannot be allowed to pollute the neighbouring streams, and its accumulation would be very inconvenient: it is necessary, therefore, to boil it to dryness, when the solid residue is used as fuel.

In order to separate the remaining impurities and that portion of the sulphuric acid which is left in the paraffin oil, it is next subjected to the action of a strong solution of caustic soda. This chemical reagent is also prepared at the works, a regular soda factory being in constant operation. This soda is rendered caustic by quicklime; and after having been used to purify the oil, is again worked up and re-used over and over again.

As thus purified, the oil contains four distinct commercial products, that require to be separated from each other in order that each should be made available for useful and economical purposes. To effect this separation, the oil is again distilled. The first elevation of temperature drives over the lighter and more volatile portions; these are collected separately, and when purified by a subsequent distillation, yield on condensation the fluid known as naphtha. This naphtha, however, differs essentially from that obtained from coal tar; the paraffin naphtha having a specific gravity of ·750, whereas that procured from coal tar has a specific gravity of ·850. The paraffin naphtha is of great value as a substitute for turps, and as a solvent for Indian rubber. It is also largely used in those naphtha lamps in which the fluid descends down a long pipe from an elevated reservoir, and being converted into vapour by passing through the heated burner, jets out into a star-like flame. These lamps, from not requiring a glass, nor being extinguished by a powerful current of air, are much employed by costermongers, and workmen in railway tunnels and similar localities.

From its great volatility, the naphtha does not require for its evaporation the heat of an open fire: it is therefore finally distilled in a separate house devoted to the purpose, the heat being furnished by the steam from a boiler situated outside the building. On the perfect separation of the lighter and more volatile naphtha depends the safety of the burning oil. The freedom from danger which has always characterized Young's paraffin oil, shows the care with which this precaution has always been observed at the Bathgate Works.

The burning or paraffin oil, which is the next product in point of volatility, comes over at a considerably higher temperature than the naphtha. Its properties are too well known to require a lengthened description. The oil burns slowly and safely, and has a greater illuminating value than any other oil in the market.

The third product in point of volatility is the heavy oil used for lubricating purposes. This oil has been extensively used in the Lancashire factories in lubricating the fine machinery, and is preferred to sperm, on account of its superior lubricating qualities, safety against spontaneous combustion, and smaller cost. As originally obtained, the lubricating oil contains dissolved in it a very considerable proportion of solid paraffin.

In order to cause the crystallization of this paraffin from the heavy oils, a low temperature is requisite. As this occurs naturally only in winter, during the greater part of the year an artificial refrigerating apparatus became indispensable. Formerly a machine acting by means of ether was employed; but that has been entirely superseded by a most beautiful refrigerating instrument invented by Mr. Kirk, the resident engineer of the works. By this contrivance the necessity of employing expensive volatile liquids is entirely obviated, their place being supplied by atmospheric air. It is difficult to say which is most to be admired—the theoretical perfection or the practical efficacy of this instrument. The details of its construction would occupy too great a space in the present article; but the principle on which it acts is so simple, that it is readily explained. By the action of a piston working in an ordinary cylinder, a quantity of air is suddenly and forcibly compressed in a separate vessel. By this compression, the latent heat of the air is forced out, and its temperature instantaneously becomes very highly raised. The heat of the air, however, is rapidly abstracted by contact with the sides of the cavity, which are kept cold by a stream of water. The compressed air so cooled is then passed to the other extremity of the containing vessel, and permitted to expand. In doing this, it takes in an equal amount of heat to that which it had lost by condensation; and it abstracts this amount from the surrounding objects, cooling with great rapidity a stream of brine which flows through channels in the vessel. This stream of brine, which is much colder than freezing water, is employed to lower the temperature of the heavy oils down to that point at which the paraffin crystallizes out.

Some idea of the efficiency of Kirk's engine may be gained from a consideration of the fact that a small model worked by hand will freeze mercury, and that the working machine at Bathgate produces a cooling effect equivalent to two tons of ice every twenty-four hours, at a very small expenditure of fuel. The heavy oils containing the frozen paraffin are next put into bags, when the oil drains away, leaving the solid paraffin. It is difficult to imagine any more beautiful substance than paraffin: in its liquid state, it runs like water, looking brighter and more transparent than the neighbouring trout-streams; as poured into the vessels in which it is to solidify, it produces the sound of falling water; and it possesses a high refractive power, that adds greatly to the beauty of its appearance. In a solid form, it is the most elegant of all the substances used for making candles; whilst in its illuminating power it surpasses even spermaceti itself—eighteen pounds and a half of paraffin candles giving the same amount of light as twenty-three pounds of sperm, twenty-six of wax, twenty-nine of composite, and thirty-six of ordinary tallow. Hence, though dearer in first cost, when the actual illuminating power, long duration of burning, and whiteness of light are taken into consideration, it will be seen that they are cheaper than composite. One use of the paraffin candle-ends will commend them to the ladies of the household: a small piece of paraffin added to starch will be found to give a gloss and brilliancy of surface to the starched linen that can be attained by no other addition.

Having passed in review the various stages of this important manufacture, little now remains to be said respecting the mode in which the paraffin oil is distributed. From the greater resistance of casks than of metallic vessels to accidental violence in transit, the former are obviously the best means of insuring its safe conveyance; but the diffusive power of the oil is so great, that it readily penetrates through the joinings of the staves. This inconvenience has been met in a very ingenious manner: each cask receives a coating of glue internally; this renders it quite impervious to the oil, so that the casks when in the possession of the retailer may be stored without the loss and annoyance of leakage.

The cooperage attached to the works is a large and extensive organization: not only are the casks made and glued, but there is a distinct department where those returned to the works are cleaned and re-glued; and there is even a machine for the purpose of scrubbing the exterior of each, so that on its re-issue it goes forth in a clean form that is not objectionable in any warehouse in which it may be located.

I cannot conclude this hasty and imperfect sketch of this important branch of our chemical manufactures without expressing my thanks to Mr. Young and his partner Mr. Meldrum for the very courteous manner in which the works were thrown open to my inspection: every process was explained, samples of every stage of the manufacture were placed at my disposal for subsequent examination, and the whole manufacture displayed with a freedom which seemed to say—We have here nothing to conceal: we have no objection to our processes being known, and we wish our productions to stand upon their own merits.

NEW REMEDIES.

DICENTRA (CORYDALIS) FORMOSA.

SYNONYMS.—*Corydalis biaurita* (Horn and Vahl ?) *Corydalis formosa* (Pursh and Neck.), *Dicentra formosa* (Borkh. and Gray), *Dielytra formosa* (De Cand.), *Dielytra formosa* (Torr.), *Eucapnos formosus* (Bernh.) and *Dicentra eximia*; *Fumaria eximia, Fumaria formosa*, of some other botanists. Turkey Corn, Turkey Pea, Choice Dielytra, Stagger-weed, &c.

This plant was known to the Eclectics as the *Corydalis formosa*, by which name it has been introduced to the notice of the medical profession in America and in this country. According to Gray,[*] *Corydalis* was "an ancient name for the 'crested lark,' and for some plant of the Fumitory family, which probably took the name from the spur of the flower, being somewhat like that of the larkspur." The flowers of the true genus *Corydalis* have only one spur at their base, whereas those of the Turkey Corn have two, in consequence of which the generic name *Dieentra*, from δις, double, and κέτρον, a spur, was given to it by Borkhausen and adopted by Gray. The specific name is from the Latin *formosus*, beautiful, alluding to the beauty of the plant. Its popular names have been conferred upon it in consequence of its properties, the form of its tuber, and the beauty of its appearance.

BOTANY.—The Turkey Corn is a perennial herbaceous plant indigenous to the States of North America, occurring westward and south of New York to North Carolina. According to Pursh and others, "it grows in the clefts of rocks, on the hills and mountains of Virginia and North Carolina," and is said to delight in a rich soil and decaying vegetation. According to De Candolle, it is also met with in Canada. It is a member of the natural family *Fumariaceæ*—the Fumitory order. The tuber (improperly termed the root) is of a globular form, and is the only part employed in medicine. According to some authorities,[†] "it should be collected only while the plant is in flower;" but others direct the collection to be performed[‡] "late in the autumn, after the leaves have died down, or in the spring, before active vegetation has commenced." The leaves, which spring from the tubers, are three or more in number, ternately compound, having pinnately multifid segments, and covered with a pale green bloom upon the under surface. The flowers are of a reddish purple, and are arranged in cymose clusters upon the naked flower-stem or scape, which varies from six to twelve inches in height. They blossom from May to September; and from the long period that the flowers remain in bloom, and the general beauty of the plant, it is in much request for cultivation in gardens, &c.

CHEMISTRY.—In the fresh state, the tubers possess a faint peculiar odour, which is almost imperceptible in the dried state when they have been long kept, unless they are moistened with warm water. When chewed, they have a slightly bitter taste, which is at first by no means disagreeable, and is followed by a feeble tingling and sensation of warmth in the mouth and throat, and a slight increase in the flow of saliva. According to the experiments of Wenzell, the tubers contain an alkaloid termed *Corydalia* or *Corydalina*, fumaric acid, yellow bitter extractive, acrid oleo-resin, &c. Water and alcohol are stated to take up the active properties. *Corydalina* is a crystalline body, unalterable in the air, tasteless, inodorous, and very soluble in alcohol, chloroform and ether, but insoluble in water. It combines with the acids to form salts, which are bitter to the taste, and very soluble in water. Nitric acid, even when much diluted, is stated to colour Corydalina red, or blood red. The Eclectic remedy *Corydalin*, one of the so-called concentrated preparations, must not be confounded with this alkaloid. It is a kind of resinoid extract, consisting principally of a mixture of the alkaloid Corydalina, resin, bitter extractive, and colouring matter.

MEDICINAL PROPERTIES.—Turkey Corn is stated in some of the American medical publications to be one of the best remedies in syphilitic affections, and valuable in scrofula and many skin diseases. It is considered to possess alterative, antiscorbutic, antisyphilitic, diuretic, resolvent, tonic, and other properties. The resinoid extract Corydalin is regarded by the Eclectics as possessing in itself the entire therapeutic virtues of the plant; it is said to be especially valuable in syphilis and scrofula, and in the former its effects are described by some writers as almost magical: in this disease it is often employed in conjunction with podophyllin. It is frequently given in conjunction with some of the vegetable cholagogues to secure some action on the biliary organs and bowels, with the diuretics or with the stimulant tonics in languid states of the system. It is also considered by the Eclectics to be valuable in the treatment of various cutaneous eruptions, in dropsy, general debility, various diseases of the urinary organs, and in several other diseases.* Dr. Grover Coe † says, "Perhaps no single remedial agent possesses more positive and energetic antisyphilitic and antiscorbutic properties than Corydalin."

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[*] Gray's "Genera of Plants of the United States," vol. i., p. 124.

[†] Tilden and Co.'s "Book of Formulæ," p. 35.

[‡] "Ph. Journ.," 2nd Series, vol. iv., p. 354.

PRINCIPAL PREPARATIONS AND DOSES.—The following preparations are made by Messrs. Tilden and Co., and are enumerated in their Book of Formulæ, with the doses appended:—*Corydalin*, gr. ss. to gr. j.; *Fluid extract*, gtts. x. to gtts. xl.; *Tincture*, ʒss. to ʒij.; *Compound syrup*, ʒss. to ʒj. The powder is given in doses of from grs. x. to grs. xxx.

Professor Bentley, in an exhaustive and excellent article on this subject published in the *Pharmaceutical Journal*,‡ of which we have freely availed ourselves, gives the following formulæ for a tincture and decoction:—

TINCTURE.—Take of Corydalis tubers, bruised, *four ounces;* proof spirit, *two pints:* digest for fourteen days, express, and filter. Or, the tincture may be made in the ordinary way, by percolation. Dose, ♏xx. to ♏lx.

DECOCTION.—Take of Corydalis tubers, bruised, *half an ounce;* distilled water, *one pint:* boil down to sixteen fluid ounces, and strain. Dose, f.℥j. to f.℥ij.

THE NEW AMERICAN PHARMACOPŒIA.

BY EDWARD PARRISH, OF PHILADELPHIA. §

THE Pharmacopœias of Europe, and especially those of the three colleges of London, Edinburgh, and Dublin, were in use in the United States until the year 1820, when an effort, originating in the New York State Medical Society, and combining the several medical organizations, culminated in the first edition of the United States *Pharmacopœia.* This work has been subjected to revision every ten years since its original issue; Pharmacopœial Conventions having been held successively in Washington in 1830, 1840, 1850, and 1860, at each of which the general features of the work were submitted to discussion, and the revision and publication intrusted to a committee. The late committee, under the chairmanship of Dr. Franklin Bache, has, like its predecessors, held its meetings in Philadelphia, and here issued the work.

The general features of former Pharmacopœias will not be so interesting to the reader as those of the edition just issued, and we therefore proceed to give an idea of the arrangement and structure of the work as at present constituted. The primary division is into the LIST OF MATERIA MEDICA and PREPARATIONS. In the list are enumerated the leading drugs used in medicine, of mineral, vegetable, and animal origin. The object of this is to give the correct name of each of these, a matter of very great importance in view of the numerous and indefinite synonyms used in common language; also, to define the properties by which they may be severally identified, and the sources, botanical, &c., from which they are derived. The list does not include all the crude medicines in use, but such of them as the authors of the work consider as of such permanent reputation as to justify their being made *officinal*—this term having a technical application to medicine authorized by the Pharmacopœia. There are two lists, primary and secondary, the latter designed to include some drugs, chiefly indigenous to our own country, which are, as it were, on trial, and liable to be promoted into a full officinal position in the course of future revisions. It is also a convenient place to drop some "obsolescent" remedies, such as *cowhage*, *pellitory*, *simaruba bark*, and *tormentil*, which, having fallen into disuse, are still worthy to be kept in respectful remembrance. Among the medicines now for the first time found in the primary list, are *arnica flowers*, which we doubt not are now as extensively employed in the form of tincture as any other external remedy; *chiretta*, a popular tonic, resembling quassia, in therapeutical applications; *ignatia*, the poisonous seed of *Strychnos St. Ignatia*, from which is prepared the extract so much employed as a powerful tonic in dyspeptic affections; *matico*, the styptic: *mastiche*, a choice aromatic resin; *vanilla*, the popular flavouring agent; *leptandra*, a favourite indigenous alterative; *pepo*, the brief name given to pumpkin seed, and other less important vegetable remedies. Among the mineral substances introduced, we notice *phosphorus* and *phosphoric acid; carbonate of lithia*, the new antilithic; and *chromic acid*, which possesses the properties of a caustic without the danger of spreading on to the adjacent parts. Numerous other drugs are introduced into the list on account of their uses in making the *preparations*.

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* Coe's "Concentrated Medicines," pp. 334-336. † "Concentrated Organic Medicines," p. 335.

‡ Vol. iv., Second Series, p. 357.

§ Extracted from the *Medical and Surgical Reporter*, published in Philadelphia.

To this class the present revision has added the following new remedies:

Acetum Lobeliæ.
Acetum Sanguinariæ.
Acidum Hydriodicum Dilutum.
Acidum Nitromuriaticum Dilutum.
Acidum Phosphoricum Dilutum.
Acidum Sulphurosum.
Acidum Valerianicum.
Æther Fortior.
Aloe Purificata.
Aluminæ Sulphas.
Ammoniæ Valerianas.
Antimonii Oxidum.
Antimonii Oxysulphuretum.
Aqua Aurantii Florum.
Aqua Chlorinii.
Aqua Creasoti.
Atropia.
Atropiæ Sulphas.
Bismuthi Subcarbonas.
Cadmii Sulphas.
Calcis Phosphas Præcipitata.
Ceratum Extracti Cantharidis.
Cinchoniæ Sulphas
Collodium cum Cantharide.
Emplastrum Antimonii.
Emplastrum Arnicæ.
Emplastrum Picis Canadensis.
Extractum Arnicæ Alcoholicum.
Extractum Buchu Fluidum.
Extractum Cannabis Purificatum.
Extractum Cimicifugæ Fluidum.
Extractum Cinchonæ Fluidum.
Extractum Colchici Radicis Fluidum.
Extractum Colchici Seminis Fluidum.
Extractum Colocynthidis Alcoholicum.
Extractum Conii Fluidum.
Extractum Digitalis Alcoholicum.
Extractum Dulcamaræ Fluidum.
Extractum Ergotæ Fluidum.
Extractum Gentianæ Fluidum.
Extractum Hyoscyami Fluidum.
Extractum Ignatiæ Alcoholicum.
Extractum Ipecacuanhæ Fluidum.
Extractum Lupulinæ Fluidum.
Extractum Pruni Virginianæ Fluidum.
Extractum Sarsaparillæ Fluidum (*simple fluid extract*).
Extractum Senegæ Alcoholicum.
Extractum Serpentariæ Fluidum.
Extractum Spigeliæ Fluidum.
Extractum Stramonii Alcoholicum.
Extractum Taraxaci Fluidum.
Extractum Uvæ Ursi Fluidum.
Extractum Valerianæ Alcoholicum.
Extractum Veratri Viridis Fluidum.
Extractum Zingiberis Fluidum.
Ferri Chloridum.
Ferri et Ammoniæ Citras.
Ferri et Amomniæ Sulphas.
Ferri et Ammoniæ Tartras.
Ferri et Quiniæ Citras.
Ferri Lactas.
Ferri Pyrophosphas.
Ferri Sulphas Exsiccata.
Infusum Juniperi.
Infusum Pareiræ.
Infusum Picis Liquidæ.
Infusum Salviæ.
Linimentum Chloroformi.
Liquor Ferri Citratis.
Liquor Ferri Subsulphatis.
Liquor Ferri Tersulphatis.
Liquor Gutta-perchæ.
Liquor Hydrargyri Nitratis.
Liquor Sodæ.
Mel Sodæ Boratis.
Mistura Chloroformi.
Oleoresina Capsici.
Oleoresina Lupulinæ.
Oleoresina Zingiberis.
Oleum Erigerontis Canadensis.
Pilulæ Aloës et Mastiches.
Pilulæ Antimonii Compositæ.
Pulveres Effervescentes.
Pulveres Effervescentes Aperientes.
Pulvis Rhei Compositus.
Quiniæ Valerianas.
Resina Jalapæ.
Resina Podophylli,
Resina Scammonii.
Santoninum.
Sodæ Valerianas.
Spiritus Anisi.
Spiritus Chloroformi.
Spiritus Cinnamomi.
Spiritus Limonis.
Strychniæ Sulphas,
Syrupus Aurantii Florum.
Syrupus Lactucarii,
Syrupus Rosæ Gallicæ.
Syrupus Rubi.
Tinctura Arnicæ.
Tinctura Cannabis.
Tinctura Opii Deodorata.
Tinctura Veratri Viridis.
Trochisci Cubebæ.
Trochisci Ferri Subcarbonatis.
Trochisci Zingiberis.
Unguentum Acidi Tannici.
Unguentum Benzoini.
Unguentum Veratriæ.
Zinci Valerianas.

We insert this list because, it shows to those familiar with the previous editions of the national standard, the progress made during the past ten years, which has induced the highly conservative Committee of Revision and Publication to add so large a number of valuable preparations to those previously officinal, (a few old preparations are dismissed from this edition,) and because it serves to show the drift of modern pharmacy toward more scientific and, in a general way, more concentrated medicines. Our space will not allow of extended comments upon these formulæ. We congratulate the profession upon the introduction of twenty-one fluid extracts, though we feel tempted to demur at the selection of *conium*, *hyoscyamus*, and *veratrum viride*, for this form of preparation. Of the two first we have tinctures of appropriate strength given in doses of thirty or forty drops, while of the last the tincture is so strong as to require a dose seldom exceeding ten drops. These fluid extracts will, it appears to us, be too strong to be convenient, and we see no reason for adopting them which would not apply to other remedies of the same class. The peculiar adaptations of the form of fluid extracts are to remedies the doses of which are comparatively large, such as *cinchona*, *gentian*, *serpentaria*, *valerian*, *uva ursi*, *buchu*, *senna*, *ergot*, *taraxacum*, and *dulcamara*; and the fluid extracts of these and similar drugs greatly aid the physician in prescribing. Fluid extracts of *rhubarb*, of *ipecacuanha*, and of *spigelia* come in play in the preparation of the weaker officinal preparations of the same drugs, though the plan of purchasing fluid extracts exclusively, as pursued by some physicians, and from these preparing all the corresponding infusions, syrups, tinctures, &c., is far from realizing the most perfect results. The great utility and convenience of fluid extracts consists in the dose being in each case a measured equivalent of the weighed dose of the drug; so that a drug of which the dose is a drachm would be given in the form of fluid extract in a fluid drachm or teaspoonful dose; the dose of the drug being ten grains, that of the fluid extract will be ten minims, or drops.

Among the additions the reader will notice no less than eleven new preparations of iron. Of these none has more interest or value than *liquor ferri subsulphatis*, "Monsell's solution." The physician should not fail to adhere to this officinal name, by which it is distinguished from solution of tersulphate, made officinal for the extemporaneous preparation of the hydrated oxide, the antidote for arsenic. Iron by hydrogen, formerly called *ferri pulvis*, is now to be designated as *ferrum redactum*. We notice with pleasure that *ferri pyrophosphas* is made officinal; this is the most tasteless of the soluble iron salts, the least disposed to blacken by contact with astringents, and withal the least liable to disagree with delicate and sensitive stomachs.

It will be unexpected to many to notice that *tinctura veratri viridis* is now for the first time found in the Pharmacopœia; it is a strong preparation, designed to be given in a dose of from five to ten grains. *Tinctura opii deodorata* is designed to supersede the various elixirs of opium in use; it should receive a fair trial on all hands. *Tinctura cannabis* (Indica) and the *extractum cannabis purificatum* will be prized by physicians; the latter we regard as an experiment in proving the quality of this valuable "exhilarant." It must not be forgotten that *syrup of ipecacuanha* is doubled in strength in the new edition, and *lead water* is improved by directing *three* drachms of the strong solution, instead of two as formerly, to the pint of water. Of the changes in *nomenclature* which should be carefully studied by every physician and pharmaceutist, perhaps the most important is the naming of "Dover's powder," *pulvis ipecacuanhæ compositus*, instead of pulv. ipecac. et opii, as formerly.

Another notable modification of nomenclature is in the case of neutral mixture, which as made with lemon juice is called *mistura potassæ citratis*, though as made by the formula, with citric acid and bicarbonate of potassa, it is named *liquor potassæ citratis*; it is a serious objection to such modifications that they are quite overlooked by most physicians, and hence lead to confusion in the compounding of prescriptions.

This article has already been too far extended to give the few new extemporaneous formulæ which the Committee have vouchsafed us. The *pilulæ aloes et mastiche*, as they do not contain ipecacuanha, do not substitute "Chapman's dinner-pills," but more nearly represent "Lady Webster pills." *Pilulæ antimonii compositæ* are "Plummer's pills," a famous remedy of long standing in England. *Spiritus chloroformi* substitutes the "chloric ether," so much resorted to in the composition of anodyne mixtures. *Mistura chloroformi* contains chloroform and camphor combined into an aqueous mixture by the aid of yolk of eggs; it will doubtless serve a good purpose.

On the whole, this Pharmacopœia is a great improvement on its predecessors, and worthy to occupy a place in every physician's and druggist's library, or rather upon his office table.

The Committee have held one hundred and nineteen meetings during the consideration of its details, and of course all its processes have been subjected to repeated experimental tests. That it should be faultless could not be expected; but we think that both the professions, ably represented in the Committee, have cause to thank them for their zeal and industry, and to adopt their conclusions unreservedly.

OBJECTS FOR THE SHOP-WINDOW.

BY THE EDITOR.

II. DRUGS.

Specimens of the Vegetable Materia Medica are not good show-objects: still, they must not be disregarded by the Chemist and Druggist who wishes to have his calling well represented in his window. The articles to be selected are those which will best bear exposure to light, and which are remarkable for excellence of quality or peculiarity of form.

The medicinal seeds and dried fruits are all more or less suitable for window display. Of these the most interesting are Staphisagria, Cocculus Indicus, Papaver, Cydonium, Colocynthis, Nux Vomica, Ricinus, Cubeba, Juniperus, and Cardamomum.

Of roots, only those having marked peculiarities should be exhibited; as, Calumba, Ipecacuanha, Jalapa, Rheum, and Serpentaria.

The medicinal woods (Guaiacum lignum, Quassia, Hæmatoxylum, &c.) and medicinal barks (Cusparia, Cinchona, Cinnamomum, Cascarilla, &c.) are all well suited for the window. Fine and clean specimens should be chosen.

Most of the herbs, leaves, and flowers rapidly deteriorate under the influence of light, losing their characteristic colours. Senna, Anthemis, Lavandula, and Cetraria are, however, frequently displayed in chemists' windows. We have seen beautiful dried specimens of Digitalis purpurea, Hyoscyamus niger, and other medicinal plants, which retained their natural forms and much of their natural colours. Could such specimens be obtained readily, they would form most appropriate and elegant window ornaments. The method employed in drying them has, we believe, never been published.

The officinal gums, resins, and inspissated juices are generally well adapted for exhibition. The following list includes the most interesting articles of this description:—Cambogia (Siam), Guaiacum, Myrrha, Acacia, Catechu, Kino, Ammoniacum, Manna, and Scammonium.

Of the Animal Materia Medica we can only think of three articles suitable for display, namely, Cantharis (Spanish flies), Coccus (cohineal), and Spermaceti.

Specimens of drugs will soon become unsightly if they are exposed to moist air, or allowed to collect the dust which finds its way into every shop-window. They must, therefore, be kept under cover. Glass saucers covered with small hemispherical glass shades may be used for the choicest specimens, and wide-mouthed stoppered bottles of clear glass for others.

The labels constitute an important element in the display, for unless the specimens are named and described they will attract no attention. Some members of the trade have lately adopted the suggestion of their former botanical teacher, and labelled all their window specimens, as though they were intended for a museum. We give examples of the kind of labels we would recommend below:—

Natural Order—RANUNCULACEÆ.
STAPHISAGRIA.
STAVESACRE SEEDS.
The seeds of *Delphinium Staphisagria.*

Natural Order—CUCURBITACEÆ.
COLOCYNTHIS.
COLOCYNTH, OR BITTER CUCUMBER.
The peeled fruit of *Citrullus Colocynthis.*

Drugs ought not to be exhibited in too great profusion, as there are many more attractive objects connected with the business of the Chemist and Druggist. In our last paper we mentioned some of these; in our next we shall refer to others which come under the general head of "Sundries."

PRIZE-ESSAY CHEMISTRY.

In *Weldon's Register* for the present month there is, as usual, abundance of excellent mental food for the scientific man, the artist, and the general reader.* There is one dish particularly piquant, and we have obtained permission to set it before our readers. This is an article entitled "A Pair of Prize Essays," by our esteemed contributor, Mr. W. B. Tegetmeier. After exposing the evils of the prize-essay system by sound reasoning and apt illustration, the writer proceeds to criticise two recent products of this system in the following manner:—

"The utter worthlessness and extreme folly of the prize-essay system has received its crowning demonstration during the last few weeks. If there be a single believer in the fallacy among the readers of the *Register*, we beg to call his careful attention to the following facts. The Salt Chamber of Commerce of Northwich, being desirous of increasing the sale of salt for agricultural purposes, offered two prizes, of £50 and £25 respectively, for the best two essays on the subject. The Chamber then appointed a committee, consisting, as we are informed, of 'nine qualified members,' who unanimously awarded the first prize to Mr. Robert Falk, who, they say, 'has devoted an amount of attentive research, hitherto without parallel in treatises on the same subject,' and the second to Dr. Phipson, 'who has written an admirable paper.'

"It is to these two precious productions that we wish to call the attention of our readers. Than the first, a more discreditable exhibition of hopeless ignorance never disgraced the scientific press of any country. The writer does not even know the names of the things of which he is writing; and his ignorance of chemistry would be discreditable to any boy who had ever paid half-a-dozen visits to the Polytechnic, and spent half-a-crown in buying a few acids and alkalies.

"Salt, as doubtless most of our readers know,—excepting, of course, those belonging to the committee of the Northwich Salt Chamber of Commerce,—consists of two elements, chlorine and sodium. Dissolved in water, these elements may be regarded as entering into new combinations, the chlorine uniting with the hydrogen, and the sodium with the oxygen, of that liquid. Hence, dissolved salt may be viewed as a compound of hydrochloric acid and the alkali soda.

"As compounds of chlorine with other elements are termed chlorides, the scientific name of dry salt is chloride of sodium. Of this simple elementary knowledge poor Mr. Falk is hopelessly ignorant. He constantly writes of 'salt, or its *chloride*.' He terms '*soda* and *chloride*' the 'two constituents of common salt,' and speaks of 'the *chloride* of the *chloride* of potash.' He writes of 'the *earthy* basis of ammonia,' and terms salt one of our most '*neglected alkalies*.' In his table of analyses of plants, he informs us that 'potatoes contain from seven to thirteen per cent. of salt, and that mangolds contain more than half their weight, or fifty-two per cent.,' of the same substance! Nor is the utter ignorance of chemistry here manifested counterbalanced by knowledge of any other kind. Ignorant of the very rudiments of physiology, and of the fact that the liver is a secreting organ, he says that without salt 'the *absorption* of bilious secretions in the liver' could not go on.

"To quote all the examples of ignorance in his production would be to transcribe the whole essay,—an infliction which we will, in charity, spare our readers. One more quotation, and we have done with Mr. Falk. Ignorant even of his own ignorance, he 'believes he has fairly exhausted the subject, and laid bare all that science and practice have brought to the light of day in the last twenty years!'

"Can it be believed that this precious farrago of nonsense should have received a £50 prize at the hands of nine sane men in this, the nineteenth century? Surely the Asylum for Idiots has not extended its beneficent aid to Cheshire.

"The second premium was awarded to Dr. Phipson, who, we may presume, thinking anything good enough for a prize essay, hastily fudged up a few facts and fictions respecting the subject. Of course, we are informed that salt was known to the ancients, and that 'salary' is derived from *salarium*. There is a full dose of other information of the like kind, but for facts of any practical value the reader looks in vain. We are informed that, in salting meat, when liquid pickle is used, 'the solution should afterwards be evaporated, or boiled down, to *get rid of the salt, and the remaining juice used as a sauce to the meat*.' Rather good, this, for a gentleman who signs himself a 'Member of the Scientific Societies of Brussels, Antwerp,' &c. &c.

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* The scientific reader will find six well-filled columns of "Scientific Intelligence," by Mr. Edward Sonstadt, and a capital account of "The Telegraph to India *viâ* the Persian Gulf," by Mr. C. W. Quin.

"Again, we are told that in 'boiling potatoes, a handful of salt thrown into the water is almost essential to obtain a satisfactory result: and the reason is simply this: that water holding salt in solution boils at a higher temperature than pure water, and, consequently, whatever is submitted to boiling salt and water receives a greater amount of heat than it can receive in boiling spring water.'

"If Dr. Phipson, F.C.S., &c. &c., will go into his kitchen, ask his cook, when boiling the potatoes for his dinner, to put in twice the usual quantity of salt, and then plunge a thermometer into the liquid, he will find that the temperature will not be raised a single degree. Nor is any elevation of temperature above the boiling point of pure water necessary to the proper cooking of potatoes, as the starch granules, of which the solid part of a potato chiefly consists, do not require even as high a temperature as 190° Fahr. to cause them to crack and become thoroughly cooked.

"As another valuable piece of information, we are assured that the most advantageous proportion of salt to employ in salting butter is *one pound of salt to every six or seven pounds of butter*. This will really be a novel fact to dairy farmers. Morton, in his *Handbook of Dairy Husbandry*, says that the quantity should certainly not be more than three or four ounces per stone of fourteen pounds; and, as knowing something of these matters practically, we may assure Dr. Phipson that if more than half a pound per stone is added, the butter is too salt to be saleable. But what are facts to the prize essayist, or to the sapient Solons who adjudicate the prizes?

"Had the Salt Chamber of Commerce commissioned Dr. Way, Dr. Anderson, or any other practical scientific man, to write a treatise on the use of salt in agriculture, they would have made a good use of their £70, and have obtained a useful pamphlet; whereas, as the case stands, they have only added one more to the numerous proofs of the prize-essay fallacy, and by their absurd award rendered themselves the laughing-stock alike of all the scientific and of all the practical men in the kingdom."

ON THE NECESSARY APPARATUS FOR SMALL CHEMICAL AND PHARMACEUTICAL OPERATIONS.

BY EDWARD PARRISH.*

In answer to the query as to the smallest outfit of apparatus for a retail pharmaceutist, with reference to the preparation of chemical and pharmaceutical products on a limited scale, I offer the following observations:—The very smallest outfit is perhaps *never* desirable, as success in a process is often prevented from want of suitable apparatus; though, on the other hand, the accumulation of complex and costly implements is seldom productive of convenience or economy.

To aid the inexperienced in reaching a proper medium between the extremes of too much and too little apparatus, and to show how very small an outlay will put it in the power of the pharmaceutist to employ his leisure profitably and pleasantly in manipulation, is the object of this essay.

It is, of course, presumable that the apparatus for powdering drugs, for forming solutions, for percolation, for filtration, for weighing, and the ordinary dispensing operations, are already in every shop; they are indispensable to the daily demands of business, and are also available for many chemical and pharmaceutical processes, too seldom pursued by the apothecary. Every establishment is also provided with a stove or other heating apparatus, which, in the proper season, will serve many purposes in manufacturing; but as these are often ineligible, it will be necessary to include furnaces and lamps in our enumeration. Suitable works on the chemical and pharmaceutical processes should be in the library of every shop, but are omitted from the list. The object will, perhaps, be best attained by giving first a list of apparatus desirable to a beginner who is already possessed of the ordinary apparatus for dispensing, and following this with a more limited list designed to show the minimum of expense required for apparatus necessary to carry on the ordinary small chemical and pharmaceutical manipulations.

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* From the *Proceedings of the American Pharmaceutical Association.*

SUITABLE OUTFIT OF APPARATUS.

	Estimates.	
	Lowest.	Highest.
Clay furnace for charcoal, gas-furnace and tubing, or alcohol lamp	$ 50	$3.00
2 Iron pans for sand-bath and water-bath	75	1.00
3 Evaporating dishes, half-pint, pint, and quart	1.37	2.15
3 Funnels, glass or porcelain	60	1.10
1 Quart precipitating jar	37	37
2 Retorts, half-pint and pint	75	88
1 Iron retort stand	1.50	2.00
2 Flasks for heating liquids	60	75
1 Pharmaceutical still—tin	2.50	3.50
1 Porcelain spatula—glass rod and tube	56	75
2 Files (rat-tail and triangular), elastic tubing, &c.	50	50
	*$10.00	$16.00

Of the above, the duplicates may be omitted at the commencement, especially where any deficiency occasioned by breakage can be speedily supplied. The funnels may be omitted if two or more are already in the store, though one of extra size is desirable for percolation in making fluid extracts. The precipitating jar may be substituted by a quart packing or salt-mouth bottle, if at hand. One retort may suffice; though in making pure and strong nitric acid, a product very desirable in pharmacy, and in many other processes, this implement is important. The tin pharmaceutical still will serve well for making distilled water, rose-water, some of the medicated waters, and the distilled spirits, and will soon pay for itself if used only for recovering alcohol used in pharmaceutical processes. As thus cut down, our list will be as follows:—

	Lowest.	Highest.
1 Furnace or lamp (as above)	$ 50	$3.00
1 Iron pan, for sand-bath or water-bath	40	50
1 Evaporating dish, 1½ pints	50	90
1 Funnel, extra size	40	40
1 Retort, pint, tubulated	50	50
1 Iron retort stand	1.50	2.00
1 Flask, pint; 1 porcelain spatula	56	80
1 Pharmaceutical still	2.50	3.50
Files, glass rod, tubing, &c.	65	65
	$7.50	$12.25

Representing the least outlay practicable to furnish the necessary apparatus for general manipulation, in addition to those implements indispensable to the retail pharmaceutical shop.

* From these American prices (in dollars) our readers will be able to form an approximate estimate of the cost of the apparatus in England, where the prices are very similar.—ED. C. & D.

REVIEWS

A Dictionary of Chemistry, &c. By Henry Watts, B.A., F.C.S. Parts VII., VIII., and IX. Conhydrine—Ethylene. Longmans.

As the publication of this important work proceeds, our respect for its accomplished and industrious editor increases. Every article affords evidences of laborious research and careful collation, while the general plan of the work proves that the conscientious compiler is also a deep thinker. We have in previous notices alluded to the great length of some of the articles, and have cautioned our readers against accepting the usual meaning of the word "Dictionary" as a description of this masterly exposition of the facts and theories of Chemical Science. Every term in Chemistry and the allied branches of other sciences forms the subject of a distinct treatise characterized by remarkable fulness of detail. The work, is in fact, a collection of elaborate monographs alphabetically arranged, and when finished it will form of itself a complete library of reference on chemical subjects.

The article "Crystallography," in Part VII., is a comprehensive treatise on that science. Upwards of fifty pages are devoted to it, and no fewer than 211 illustrative woodcuts. All who wish to become acquainted with the varied forms of crystals, and to understand the beautiful laws of symmetry according to which their faces are disposed, should study this admirable treatise. It is intended for the true student who is not afraid to grapple with rather abstruse problems, and will be utterly unintelligible to the superficial reader. We may here state that it is useless to look for what is called "popular science" in the *Dictionary*.

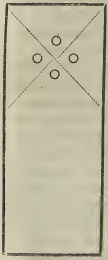
The article "Electricity" commences in Part VIII., and runs through about 100 pages in Part IX. This is also a thoroughly practical treatise, which if printed in a separate form would be hailed as a most important work. The first part of the article is devoted to a consideration of the leading phenomena of electricity; then comes a description of electric machines, electroscopes and electrometers. The following subjects are then successively discussed:—Laws of electric attraction and repulsion; distribution of electricity; development of electricity by induction; the electrophorus, condenser, and Leyden jar; the electric discharge through air and other gases, its velocity, its mechanical and thermic effects, its chemical effects, its magnetic effects; the molecular theory of electric action, the fluid theory; the development of electricity by mechanical action, friction, pressure, cleavage, &c.; the development of electricity by heat, pyro-electricity and thermo-electricity; the development of electricity by chemical action, voltaic electricity, the voltaic battery, theory of the voltaic couple, dry piles, constant batteries; development of electricity by the chemical action of solutions one upon the other; development of electricity by the mutual action of gases and liquids, polarization, gas-batteries; development of electricity by combustion; chemical effects of the electric current; electrolysis, secondary products, reduction of metals, laws of electrolytic action; magnetic action of the electric current, electro-magnetism; mutual action of electric currents, magnetization; electro-dynamic induction, magneto-electricity, induced currents, machines, induction-coil; measurement of the force of electric currents, resistance of conductors; heating effects of the electric current; electric light; physiological action of the currrent; animal electricity, muscular and nervous currents, electric fishes; development of electricity in plants; atmospheric electricity. We have given the principal heads of this one article to show its vast scope. An important contribution from Dr. Odling on Equivalents appears in the last number. This may be regarded as a continuation of the articles on Atomic weights and Classification, for it unfolds still further the new system of chemical philosophy which is adopted by Mr. Watts.

We cannot conclude this brief notice without referring to a review of the *Dictionary* which lately appeared in the columns of a great literary journal. The writer attempts to lay down the principle upon which a new chemical terminology must be constructed, while he informs the scientific reader that "since Dr. Ure wrote, the whole science of Organic Chemistry has sprung into existence," and that the alkaloids are "combinations of oxygen, hydrogen *or* nitrogen, and carbon, in ever-varying proportions, capable of combining with alkalies, acids, metals, earths, and those elements—such as phosphorus and sulphur—which still hold an independent place in our classification." The pseudo-philosopher, after this brilliant display of chemical knowledge, says—"A careful consideration of the laws which, according to well-established theory, regulate the combinations of matter, both organic and inorganic, leads us to suggest, for the study of the chemical philosopher, the possibility of constructing a terminology which shall gather into well-ordered groups the great facts of the science, around which may be collected, by a simple system, the less important phenomena."

This is a curious observation to make when criticising a work which introduces the new terminology of a system now growing up from that method of deduction which the reviewer is kind enough to recommend as something quite novel.

DALTON AND MORGAN'S POSTAL SAMPLE BAG.

The Postal authorities have recently issued a regulation by which samples of drugs, &c., may be transmitted through the post at the reduced rate of 3*d*. per quarter-pound. They have, in fact, extended the same facilities to wholesale druggists, drysalters, grocers, &c., that have long been enjoyed by the stationers and similar trades.



To the regulation, however, is annexed this proviso,—that the sample package shall be capable of being freely opened and examined. Several suggestions for patterns of sample bags have been laid before the Post-Office authorities, and declared by them inapplicable. Those of Messrs. Dalton and Morgan, to which we now call attention, have been submitted to the Postal authorities, and approved, as being well adapted for the purpose.

These may be described as long, narrow bags, formed of that peculiar material known as parchment paper (viz., paper converted into a new tissue by the momentary action of strong sulphuric acid). This is so strong, that practically it is impossible to tear it. Both the corners of the mouth of the bag are folded down in the direction indicated in the diagonal lines, and an eyelet hole pierced at once through the several folds. After the sample is enclosed, the corners are again folded down, when the holes all correspond, and a string passed through them and tied secures the enclosure, at the same time giving the facility for examination required by the Postal authorities.

ECONOMIC SMOKELESS OIL.

In the States of North America, before the universal use of the mineral oils, a liquid named "burning spirits" was largely employed as a source of artificial light. This originally consisted of alcohol, with a sufficient admixture of spirit of turpentine to render the flame luminous, care being taken not to add so large a quantity of the latter fluid as to render the flame liable to smoke. When the proportions of these two liquids were properly adjusted, the fluid was produced capable of being burned in an ordinary lamp of the most simple construction, without requiring the employment of a chimney or glass. These properties would have rendered the compound a valuable article of domestic use, unless they had been more than counterbalanced by some serious objections. Unfortunately, these drawbacks existed. Being formed of volatile spirits, the liquid was very inflammable at low temperatures, and many serious accidents happened from the use of it by incautious persons. Again, its illuminating power as compared with that of bodies richer in carbon was very low. Hence, although its convenience in use was great, it has been almost entirely superseded by the cheaper and more luminous mineral oils.

Recently, a similar compound has been introduced into this country, under the title of *Economic Smokeless Oil.* This may be described as an almost colourless, very limpid liquid having a specific gravity of ·840. The vapour takes fire when the liquid is heated to 114° Fahr., burning with a lambent flame without smoke. It is evidently a compound of methyl spirit with a proportion of mineral oil. The admixture is not of an intimate nature, as the constituents have a tendency to separate at a low temperature, the oil becoming turbid below 40° Fahr. The odour of the ingredients is disguised by the addition of nitrobenzole.

We cannot say that we view the introduction of this substance in this country with any warm anticipation of its success. As an illuminating agent, it admits of no comparison with the paraffin and petroleum oils now so extensively used. Burned in a lamp so as to produce a flame equal in size to that of an ordinary tallow dip candle, the relative illuminating power, when the candle has been recently snuffed so as to give its greatest amount of light, is only as about four to nine, proving the candle to give double the light of the lamp with equal-sized flame.

Although yielding a smokeless flame this oil cannot be employed as a substitute for spirit in heating, as it deposits soot on any substance placed within it. The faint, depressing odour of the nitrobenzole is not at all pleasant. As this body is volatilized as the liquid is burned, it may be regarded as particularly objectionable. Hence, as the Economic Smokeless Oil is not adapted for heating, and as its illuminating power is very low, its range of utility is very limited. If the objectionable nitrobenzole were not added, the oil would make a very good, cleanly, and convenient night light, as it admits of being extinguished and relighted without trouble. It is also well adapted for a cigar-lamp for hotel and tavern use, care being taken to employ it only in glass or porcelain lamps.

THE MONTH

UNITED SOCIETY OF CHEMISTS AND DRUGGISTS.

The numerous meetings of the Trade held during the last few months have demonstrated the strength of Union, and have proved that the Executive Committee of the above Society have the energy and activity required for raising a strong opposition to an oppressive measure. We do not believe that the Medical Council will attempt to carry out their designs, now that so many members of the trade are pledged to oppose them. Still, we would advise the Committee of the United Society to continue their agitation until the Medical Council declare that they have expunged the objectionable clauses of their proposed Bill. Indeed, we would counsel a continuance of the agitation until the Society's proposed Act of Incorporation is brought before the Legislature, and there is some prospect of the rights of ordinary chemists, pharmaceutists, and medical men being clearly defined.

Reports of the following meetings have been received since our last :—

HULL.

A large and important meeting of Chemists and Druggists was held at the London Hotel on the 14th ult.

The object of the meeting was to organize a local association to co-operate with the United Society of Chemists and Druggists, especially with a view to oppose the scheme projected by the Medical Council. In the absence of Councillor Balk, who was advertised to preside, Mr. Gates was unanimously called to the chair. He briefly introduced the business by pointing out the importance of a local society, and also the desirability of having the centre of operation in the Metropolis. He perfectly coincided with the principles laid down in the prospectus of the United Society.

The first resolution was moved by Mr. Fullam: "That the Chemists and Druggists of

Hull approve of the principles and objects of the United Society, and hereby form themselves into an association to assist in carrying them out.'' He said there were 35,000 Chemists and Druggists in the United Kingdom independent of the Pharmaceutical Society. If the scheme now proposed by the Medical Council, and agreed to by the Pharmaceutical Society, should become law, they must close their shops; because they were not licensed by the Medical Board. He contended that the proposers of the measure had gone the wrong way to work in excluding persons already in the trade. The Pharmaceutical Society had begun at the wrong end of the ladder. They should have incorporated every man then in the business, as did the Apothecaries in 1815.

The resolution was seconded by Mr. Hart, and carried unanimously.

Mr. Burn then moved and Mr. Bell seconded the second resolution, "That Mr. Gates be requested to be the Chairman and Mr. Hammond the Secretary of the Association;" which was also carried unanimously.

Mr. Hart then moved, "That the opposition of the United Society of Chemists and Druggists to the 56th and 57th clauses of the New Medical Act shall have the strenuous support of this Association."

Mr. Cyrus Buott, sen., who represented the parent Society, seconded this resolution in an earnest speech. He quoted the 56th and 57th clauses of the proposed New Act, and showed that the results would be most serious if it were to become law. The interference of the Medical Council was such as they ought not to tolerate. The Council was not a representative body, and was irresponsible; and more than this, it was intangible,—in fact, a myth. Not a surgeon from John O'Groat's to Land's End would father the New Medical Act. The Committee had endeavoured to find out whence these propositions emanated, but they could find no one who would take the responsibility. With regard to the alleged incompetency of Druggists to administer medicines, while regretting that the profession was disgraced by a few imperfectly qualified individuals, he was convinced that as a rule they were well fitted for their duties. The motto "Physician, heal thyself," was applicable to the Medical Council. He had seen an advertisement from a stable-boy who undertook to attend to the horses, and also mix his master's medicines. If such persons were not employed, they would not see such advertisements. The interests of the medical profession and theirs were not identical. He contended that the Druggist had a right to be represented in the Council. The Act proposed to subject them all to periodical visits of an inspector appointed by this Council. He expressed astonishment to find the Pharmaceutical Society agreeing to a principle of selection, instead of the course followed by the Apothecaries in 1815, of incorporating the entire body then in the business.

Mr. Dobson proposed and Mr. Gregory seconded a resolution in favour of the Benevolent Fund.

Mr. Milner proposed, "That the Members of Parliament for Hull be requested to withhold their support from any measure affecting the interests of Chemists and Druggists until it had been submitted to the judgment of the trade." He thought this proposal both reasonable and just. They must not look for immediate results, but "screw their courage to the sticking point" and work to win. He was sure Mr. Clay, their member, would do all in his power to serve their cause.

Mr. Chester, on seconding this proposal, recommended gentlemen to write personally. He had had occasion to write to Mr. Clay, and had never failed to receive a reply.

The Committee were then elected, including gentlemen who had formed the prior meeting.

Mr. Buott announced that sixty new members were added to the Society in Hull in consequence of this meeting, and that Mr. Liddell, a gentlemen retired from the trade, would give a guinea a year to the Benevolent Fund as a beginning for others to follow.

After making this announcement, Mr. Buott was very warmly complimented upon his able advocacy of the principles of the United Society; and cordial thanks to the Chairman for his able conduct on the occasion closed this important meeting.

SCARBOROUGH.

A public meeting of Chemists and Druggists was held at the Bull's Head Hotel on Monday, October 19th, when the principles and objects of the United Society were unanimously approved and adopted. A feeling of deep indignation was expressed against the renewed attempt of the Medical Council to obtain legal control over the Chemists and Druggists of the country; and Mr. Eccles, who presided on the occasion, and accepted the appointment of Local Secretary, was authorized to communicate to the Borough Members the request of the Scarborough Chemists and Druggists, that they would withhold their support from any bill affecting their interests until such bill had been submitted to the judgment of the Trade. Mr. Eccles, Mr. Robson, Mr. Porrett, Mr. Wells, Mr. Rowan, and other gentlemen, took part in the proceedings, which terminated with a vote of thanks to the Chairman for his ability and kindness in presiding, and to Mr. Buott for arranging the business of the meeting.

YORK.

An important meeting of the Trade was held at Harker's "York Hotel," on Friday, October 23rd, James Scawin Tonge, Esq., presiding. A number of resolutions were adopted in accordance with the principles of the United Society, and recording a unanimous protest against the claim set up by the Medical Council to interfere with Chemists and Druggists in their business. It was understood that York with the neighbouring towns was to be erected to the position of a District Association of the United Society of Chemists and Druggists, James Scawin Tonge, Esq., being requested to be the Chairman and Mr. John Brown the Honorary Secretary of the new district. Besides the Chairman, and the Secretary, Mr. Buott, who attended as a deputation from London, Mr. Dennis, Mr. Croskell, Mr. Hayland, Mr. Oglesorby, Mr. Bell, Mr. Dresser, and other gentlemen of recognized standing in the trade, took part in this very interesting meeting, Amongst the various subjects discussed was the question, "What security has the Parent Society for the fidelity of the Local Associations formed at so much expense under the responsibility of the Executive Committee?" and the following resolution was passed unanimously:—

"That the gentlemen who constitute the York District Association recognize the liberal encouragement given by the Society to apply its organization to the promotion of local interests, and declare their determination to discountenance any attempt to use it to the prejudice of the Society."

The Secretary was instructed to request Mr. J. P. B. Westwood, and Colonel J. G. Smyth, the City Members, to support only such parliamentary measures affecting the interests of Chemists and Druggists as had the concurrence of the Trade. A vote of thanks to the Chairman, and a cordial recognition of the service rendered to the Trade by the Executive Committee in authorizing Mr. Buott's visit to York, closed the proceedings. It is worthy of remark that nearly every Chemist in York has joined the Society.

OLDHAM.

A meeting of the Chemists and Druggists of Oldham, convened by the Honorary Local Secretary, in compliance with a requisition of the Committee of the above Society, was held at the "Angel Inn," on Thursday evening, 29th Oct. The object of the meeting was to consider the "Proposed Amendments to the Medical Act of 1858," which threaten to deprive Chemists and Druggists of their right to dispense Physicians' and Surgeons' prescriptions, and to compound medicines, unless members of the Pharmaceutical Society. There were present W. Braddock, Esq., in the chair; Messrs. James Bailey, W. Geddes, G. Braddock, W. Myott, James Bulsford, John Wood, James Avison, J. B. Travis, A. J. Wilson, James Radcliffe, J. J. Jackson, William White, H. Scholefield, John Hulme, W. Pullinger, John Eckersly, W. Bagshaw.

The Chairman, in opening the proceedings, remarked in strong terms upon the injustice of the proposed alterations in the Medical Act, which in their tendency would seriously damage the interests of such numbers of tradesmen, who had served their apprenticeship to the business of Chemist and Druggist, and were generally well qualified for it. He considered it very important that as a body the Chemists and Druggists should oppose the proposed amendments in their present form, but it would be in vain for them to do so unless they could propose some satisfactory test of qualification for future candidates for the business. He believed the standard of qualification for the business as proposed by the Medical Council was quite unattainable under existing circumstances by the great body of Chemists, that a simpler and lower standard was quite necessary, and if they could propose a satisfactory and practical one they might succeed in opposing the injurious clauses of the bill. He would recommend the introduction into the bill of such clauses as would secure existing Chemists and Druggists from interference. He concluded by urging upon the meeting the necessity of union and co-operation for the defence and advancement of their interests.

Mr. W. Pullinger moved, "That this meeting, whilst recognizing the necessity for such legislation as shall ensure the competent qualification of all future Chemists and Druggists, regards with serious apprehension and disapproval those portions of the proposed amendment to the Medical Act of 1858, which threaten to deprive existing Chemists and Druggists of their right to dispense Physicians' and Surgeons' prescriptions, and to compound medicines." He said but little comment was needed from him in moving the resolution. It was full and explicit in itself. The resolution was condemnatory of the 55th and 56th sections of the proposed amendment, and met the propositions of the Medical Council in the manner it was desirable. The resolution claimed the recognition of existing rights, at the same time that it affirmed the very necessary principle of providing for the future competent qualifications of persons entering the business. Mr. J. Wood briefly seconded the resolution, which was carried unanimously.

Mr. W. Geddes moved, "That, in the opinion of this meeting, such legislation will be most practical, efficient, and acceptable, when emanating from the Chemists and Druggists themselves, and that an Act of Incorporation for the whole trade, based upon a recognition of existing interests, and subjecting every future candidate for the business to an educational test, such an Act as that proposed by the United Society of Chemists and Druggists, is the safest and best mode of proceeding. The meeting further declares its willingness to aid in obtaining the proposed Act."

He remarked that having declared their opposition to the Bill in its present form, they must endeavour to prevent the recurrence of such assaults, by being incorporated. Alluding to the suggestions for the Act of Incorporation, he remarked there was nothing in them which would interfere with the rights of any one, or opposed to the most liberal principles. He believed if such an Act was obtained, it would be a great boon to the trade; it would satisfy physicians, government, and the public. To obtain it, however, they must not rely upon the assistance of medical men, who would rather encroach upon their domain. Nor on the Pharmaceutical Society, which represented only a fraction of the trade, and was annually decreasing; nor on the Government, who were "sick of physic," but upon themselves; and as they asked for no emolument, they need not be ashamed to go to Parliament for an Act of Incorporation.

Mr. Myott seconded the resolution, which was supported by Mr. W. Bagshaw, the Local Secretary, and carried unanimously.

Mr. James Bailey moved, "That copies of the foregoing resolutions be forwarded to the Members of Parliament for the borough, with a request that they will withhold their sanction from all such measures as interfere with the rights and privileges of existing Chemists and Druggists."

He agreed with Mr. Geddes in his remarks upon the liberal principles of the proposed Act of Incorporation, and believed it would not always be wise to exclude men from the business who had not served an apprenticeship to it. Many eminent men had risen to very high positions in legal and scientific circles, who had not originally been brought up to the professions in which they shone. But he considered that every man should show himself qualified for the business, before presuming to undertake its responsibilities. He believed the best means of testing this, was by establishing local boards of examiners, as recommended by the United Society of Chemists and Druggists. Alluding to the 55th clause of the proposed Act, he said he felt it was hard, after having been in business the length of time he had, to be insulted by the attempt to exclude him from the privilege he had so long enjoyed, and concluded by urging upon the meeting the necessity for united and persevering action.

Mr. J. Avison seconded the resolution. He said that with the body of Chemists and Druggists generally, he considered he had a right to the consideration of the Legislature, and viewed with apprehension the attempt on the part of the Medical Council to interfere with the rights of those at present in business, most of whom had served a long apprenticeship to it, and embarked their all in the endeavour to obtain a respectable livelihood. He did not object to a practical educational test for future members of the trade, but considered the Bill under consideration, if passed in its present form, would be most unjust to, and hard upon, Chemists and Druggists. The resolution was passed unanimously.

Mr. Geddes moved, "That this meeting resolve itself into a Local District Association, in connexion with the United Society of Chemists and Druggists, for the purpose of promoting the attainment of an Act of Incorporation of the whole trade, as suggested by that Society."

Mr. J. Bayley seconded the resolution, which, after some conversation, was put to the meeting, and carried.

A vote of thanks to the Chairman terminated the proceedings.

All the gentlemen present, who were not already members of the United Society of Chemists and Druggists, gave their adhesion to it at the conclusion of the meeting.

NEWCASTLE-UPON-TYNE.

In accordance with an advertisement, which appeared in each of the local papers, the Chemists and Druggists of the Northern Metropolis assembled on Wednesday, the 4th inst., at the Turk's Head Hotel, Grey-street, under the chairmanship of Mr. Alderman Nichol, J.P., to form an alliance with the United Society, and to protest against the interference of the Medical Council with the trade.

The worthy Alderman was cordially received by the meeting, and observed that he had been fifty-two years in the trade, and was glad to see a Society rising up which was likely to be successful in putting the Druggist upon a higher grade. He worked from morning till night, and was badly paid, whilst a superior education was required of him for the public safety.

Mr. Brockett moved the first resolution, adopting the object of, and proposing a Local Association in connexion with, the United Society. It was high time something was done to bring the Chemists and Druggists of Newcastle into a better relation to one another, and to form part of an organization for the protection of the trade. Mr. Alder seconded this motion.

The second resolution, requesting J. Fairs, Esq., to be the Chairman of the District Association, and Mr. R. H. Brockett to be the Secretary, was moved by Mr. Buott, of London, and seconded by Mr. Hardcastle.

The two gentlemen nominated having accepted office, Mr. Buott begged, on the part of the Executive Committee, to congratulate the newly-formed Association on the excellent choice they had made. During the short period he had been honoured with the acquaintance of Mr. Fairs, he had been treated by him with the utmost courtesy and kindness, and was sure from the zeal he had shown for the Society, the anxious desire he expressed for the elevation of the trade, and the practical liberality he had shown, as well as the universal esteem in which he was held, that he would, from his elevated position, create a circle of usefulness, and use his influence for the good of society; whilst Mr. Brockett was an old member, and would, he believed, do his duty as their Secretary.

Mr. Elliott having moved the third resolution protesting against the interference of the Medical Council, Mr. Buott seconded it, and said that the anxiety of the Medical Council to repudiate all intention to render their contemplated measure retrospective in its application was so much dust thrown into the eyes of the trade to divert attention from the question at issue, which was, "What right have the Medical Council to interfere with Chemists and Druggists?" In the very last Medical Act which had passed the Legislature, the Medical Council had disclaimed such right, and declared that it was not intended in any way to affect the lawful occupation, trade or business, of Chemists and Druggists. The claim now put forth was an unwarrantable assumption without a legal leg to stand upon. Mr. Buott then in a speech of some length gave a number of reasons why the Chemists and Druggists of the United Kingdom should unite as one man to resist such an invasion of their rights as citizens and tradesmen; and warned the Medical Council, and any other Council who might contemplate similar encroachment, that a power was simultaneously rising up at Bristol, Birmingham, Liverpool, Manchester, Leeds, Hull, Nottingham, York, and Newcastle, which, with that of the Metropolis, would not only defeat *them*, but bring a pressure from without the House of Commons to bear upon the legislators within and secure attention to their claims.

The fourth resolution, pledging the Association to support such parliamentary action as was necessary to obtain an Act of Incorporation for the trade, based upon a reorganization of existing interests, and applying a test of qualification to future practitioners, was moved by Mr. Hardcastle. This was an appeal to their interest as well as their zeal for the future well-being of the trade. It was to their interest to provide a competent race of dispensers, and thereby secure the confidence of the Legislature and the public. Mr. Marley seconded the resolution.

The resolution in support of the Benevolent Fund was proposed by Mr. Fairs, in a speech remarkable alike for brevity and accuracy of language, for the spirit of charity and goodwill to all, and especially for sympathy with the unfortunate poor of the trade. Mr. Downie seconded it.

Mr. Fairs again addressing the Meeting much regretted that any circumstance had occurred to render a resolution (which he moved) pledging the Newcastle Association to fidelity to the parent institution necessary. He considered that as men of honour they could not use the organization formed chiefly at the expense of the Society otherwise than *for* and *with* the Society.

It was understood that the Association would meet monthly, and a vote of thanks to the Chairman closed the proceedings which have inaugurated the tenth District Association of the Society.

LEEDS CHEMISTS' ASSOCIATION.

FIRST ANNUAL MEETING.

THE first annual meeting of this Association was held in the Barristers' Rooms, Town Hall, Leeds, on the 14th ult.; the President, Thomas Harvey, Esq., in the chair. After the election of a corresponding member and five associates, The President congratulated the members upon the healthy state of the Society, and called upon the Secretary to read the Report.

According to this Report, the Association was organized at a meeting held on the 22nd of December last. The number of members enrolled at this and subsequent meetings was fifty-three, and of associates fifty-six. At the monthly meetings the following papers have been read :—

Feb. 9.—Mr. Ward, "On the Petroleum Oils of North America;" Mr. Reynolds, "Remarks upon a proposed New Test for Methylic Alcohol."

Mar. 9,—Mr. E. Thompson, "On a cheap and accurate Chemical Balance;" Mr. Abbott, "On the Starch Granules, with illustrations by the Microscope."

April 15.—Mr. R. M. Atkinson, "On Acetic Acid;" Mr. E. Yewdall, "On the Salts of Iron, and more especially on the Tincture of the Sesquichloride."

At the last ordinary meeting for the season, held May 21st, two subjects were introduced for discussion, viz., "Provincial examinations for the minor diploma of the Pharmaceutical Society," and "The necessity of organized scientific research by means of division of labour." At a special meeting held on the 8th of June, a petition was adopted against "The Poisoned Grain Bill," and another petition in favour of the Bill for introducing the metrical system of weights and measures. In March, the Committee engaged a room for the purpose of a library and committee room. A course of eight lectures on Structural and Physiological Botany, delivered during the session by Mr. H. Denny, A.L.S., was tolerably well attended by associates, two of whom have since passed an examination upon the subject of the lectures in competition for a prize (*Bentley's Manual of Botany*) offered by the President. The successful candidate was Mr. Freshfield Reynolds. The answers of the second candidate, Mr. C. Aldridge, were so creditable to him, that Mr. R. Reynolds, F.C.S., supplied *Lindley's School Botany* as a second prize. The Report announces for the coming session a course of lectures by Mr. Ward, on Chemistry, and another course by Mr. E. Thompson, on Materia Medica.

The Report having been adopted, the following gentlemen were elected officers for the ensuing session :—

President—Thomas Harvey, Esq.; Secretary—Mr. E. Yewdall; Treasurer—J. Land, Esq.; Librarian—Mr. Abbott; Committee—Mr. E. Thompson, Mr. R. Reynolds, Mr. R. M. Atkinson, Mr. E. Brown, Mr. G. Reinhardt, Mr. George Ward.

LAW AND CRIME.

THE RECENT MURDERS AND SUICIDE BY POISON.

Our readers will expect to find in these pages some notice of that terrible sensation drama which has formed during the last few days an absorbing topic of conversation. The murderer Hunt was remotely connected with our honourable trade, having been in the employ of Messrs. Butler and M'Culloch, the well-known herbalists and druggists of Covent Garden Market. Much stress is laid upon this fact, it being supposed that the murderer possessed a deep knowledge of poisons. There is nothing, however, very remarkable in the fact that a man of good education should be acquainted with the properties of prussic acid and aconite. The "laboratory" which he is said to have fitted up appears to have had no existence; the only sign of drugs and chemicals in the house being a number of bottles on the back-parlour mantelpiece, most of them empty, the remainder containing a few such harmless substances as borax, camphor, flavouring for pastry, and a few other similar preparations that might be found in every household in the kingdom.

We need not enter into the particulars of this crime, as full accounts have appeared in all the newspapers. We will, however, extract a few passages from the leader on the subject which appeared in the columns of our great daily contemporary :—

"Yet all the circumstances under which it was committed have such an ordinary, every-day character, that not a single incident was likely to attract notice. There was no quarrel, no display of passion, no 'row,' or threats of violence. All was the fatal quietude of fixed resolve, which gave no alarm either to the victims or the bystanders. What is more common than the drawing up of a cab at the door of a public-house for the fare to refresh and treat the driver? There are classes of people who seem to think a drive incomplete without both processes. When this cab, therefore, stopped at the door of the Green Dragon, Bishopsgate, what indicated any fell purpose? Nothing: it was a most ordinary incident in the life of the street; it would not attract a glance from one man in a thousand. But before the vehicle drove on again, the terrible deed must have been accomplished. The cabman was sent into the house with a shilling for a pint of beer. He handed it through the window to 'the gentleman,' and went to the horse's head. In a moment, and unperceived by the victims, for a flash of suspicion or a single cry of alarm would have saved them, the deadly poison must have been mixed with the liquor and administered. The pot was given back to the driver and taken into the house, 'the gentleman,' turning it mouth downwards, and spilling whatever was left of its contents on the pavement. In the next minute, what a freight of death was passing, unsuspected by all, along Cornhill! Science may be able to determine how long each victim survived the draught. But the scene the interior of that cab must have presented in the interval that elapsed before it arrived at Furnival's-inn, Holborn, the imagination almost refuses to follow. The murderer must have sat face to face with the dead woman and her children, watching them one by one expire. Perhaps the second stoppage in Holborn marks the point of time when he was quite assured they were all dead. Here, again, there was nothing to excite any suspicion. He got out, paid the fare, with an added sixpence to the driver, and, directing him to go to the Royal Oak, disappeared in the direction of Holborn-hill.

"During two days no trace of the murderer was detected, and it began to be feared that this was another added to the list of crimes which have never left a clue to their perpetrators. But in the night of Monday the criminal was discovered and arrested. The suspicions of a neighbour, excited by the published description of the dead bodies and the return of the man to his house without his wife and children, led to his detection. But he has evaded human justice. By midnight on Monday the tragedy was completed by the suicide of the criminal, who had taken some strong poison when he heard the police knocking at his barred and bolted door. He died soon after his capture. The public is spared the repetition of the frightful details brought out with all the minuteness of a criminal trial; but there can be no doubt of the man's guilt, and it is some satisfaction to know that such a being is no longer among the living."

GENERAL NEWS.

THE MARSHALL HALL AND SILVESTER METHODS OF RESTORING ANIMATION.

At a recent meeting of the Metropolitan Association of Medical Officers of Health, —Dr. R. Dundas Thomson, F.R.S., President,—a letter was read from the Royal National Life-Boat Institution, referring to Dr. Marshall Hall's method for the restoration of the apparently drowned, and a modification proposed by Dr. H. R. Silvester; and asking the opinion of the Association on their relative merits. Dr. Silvester was present, and illustrated his plan on a boy. It consisted in laying the patient on the back, slightly raising the head and shoulders, drawing the tongue forwards, and keeping it so by passing an elastic band over it and under the chin. The arms are then grasped just above the elbows, and drawn gently upwards until they meet above the head (this is for the purpose of drawing air into the lungs), keeping the arms in that position for two seconds. The patient's arms are then turned down, and pressed gently and firmly for two seconds against the sides of the chest (this is for the purpose of pressing the air out of the lungs). Artificial breathing is thus carried on. These efforts are to be repeated fifteen times in a minute, until a spontaneous effort to respire is perceived. During the employment of these means, excite the nostrils with snuff or smelling salts, or tickle the throat with a feather. After natural breathing has been restored, warmth and circulation are to be induced by wrapping the body in hot blankets, applying bottles or bladders of hot water, heated bricks, &c., to the pit of the stomach, the armpits, between the thighs, and to the soles of the feet, and by rubbing the limbs upwards firmly and energetically.

In the discussion that followed,

Dr. Gibbon said that he considered Dr. M. Hall's plan more simple, which in three cases he had himself successfully tried. One of these was a person apparently drowned, one a case of poisoning by opium, and one by chloroform. He thought Dr. Silvester's plan inapplicable to stillborn children.

The President remarked that treatment was more generally successful in cases of poisoning by opium, chloroform, or spirits, there being less struggling than in drowning, which was the most fatal cause of asphyxia. It had been found that death from plugging the trachea took place in four minutes, whilst in drowning it took place in a minute and a half.

Mr. Liddle inquired how long the treatment should be continued.

Dr. Silvester said that eight hours had been occupied in the treatment with success. He had often saved stillborn children. He did not consider Dr. M. Hall's plan free from danger, as in one instance the neck of an adult had been dislocated during the treatment. He believed his (Dr. Silvester's) method would stand the test of experience, and prove a great boon to humanity.

The thanks of the meeting were unanimously voted to Dr. Silvester.—(From the *Medical Circular.*)

AMERICAN PHARMACEUTICAL ASSOCIATION.*

ELEVENTH ANNUAL MEETING.

This meeting was held at Baltimore during the second week of September last, Professor William Procter, jun., the President, occupying the chair. Most of the leading pharmacologists of America were present; and the Colleges of Pharmacy of Massachusetts, New York, Philadelphia, Maryland, and Cincinnati were represented by delegates. The report of the proceedings given in the *American Druggists' Circular* contains much that would be uninteresting, if not unintelligible, to the English reader: therefore, instead of reprinting it, we will merely give a summary of its more important details.

The Report of the Committee on the Progress of Pharmacy was presented by its able compiler, F. F. Mayer, of New York. Appended to it was a Report from the Corresponding Secretary, J. M. Maisch, relative to the production of tartar from American wines, and on the condition of the several Pharmaceutical Associations and Colleges in the United States. The Report on the Drug-market was read by Dr. E. R. Squibb: it was of especial interest, and elicited warm applause. A list of queries to be reported on at the next annual meeting was presented by W. Procter. A communication from the Editor of the London Chemist and Druggist was received, and read, and referred to the Corresponding Secretary.

The reading and discussion of answers to queries propounded at the previous meeting formed the chief business of the second and third days' sittings. We may inform our readers that these "answers" are generally elaborate essays upon pharmaceutical subjects. The answers and independent papers received and ordered to be published in the *Proceedings* were as follows:—

"On Native and Foreign Aconite Root, and their yield of Aconita," by W. Procter, junior.

"On the Advantages of the Fruit of Conium for Medicinal Purposes," by G. C. Close, of Brooklyn, N.Y.

"On a Pharmaceutical Still," by W. Procter, jun., who exhibited a specimen still.

"On the relative Value of Buchu Leaves as judged by the yield of Aromatic Oil," by P. Wendover Bedford, of New York. A valuable essay, illustrated by specimens of the oils.

"On the Action of Light and Air upon Volatile Oils," by Alfred B. Taylor, of Philadelphia.

"On the Therapeutical Value of Sanguinaria and its Alkaloid," by Prof. Thomas.

"On Fluid Extracts," by W. Procter. An extensive review of old and new formulæ and methods.

"On the Pharmaceutical Preparations and Active Principles of the *Strychnaceæ*," by F. F. Mayer.

"On Impurities of Oxides of Iron," by F. Bringhurst, of Wilmington.

"On the Presence of Arsenic in Commercial Acids," by John M. Maisch, of Philadelphia.

"On the Potash contained in New Jersey Marl," by George J. Scattergood, of Philadelphia.

"On the Internal Revenue Law," by E. Parrish.

Prof. Procter then read a paper by F. Stearns, of Detroit, on "Æsthetical Pharmacy," which was ordered to be printed.

E. Parrish followed with some remarks on the relative position of physician and pharmaceutist, entitled "A Plea for the Handmaid."

The most important resolutions of the meeting were as follows:—

On the motion of E. Parrish, it was resolved, "That the late edition of the United States *Pharmacopœia*, issued by the Committee of Revision and Publication appointed at Washington A.D. 1860, meets the warm approval of the Association; and we recommend it to the universal acceptance of the physicians and pharmaceutists of the United States, and will use our individual efforts to give it currency, and to enforce its authority as the standard of practice throughout the country."

It was further resolved, "That our thanks, and those of the profession at large, are due to the Committee of Revision and Publication of the *Pharmacopœia*, for their zeal and perseverance in the difficult and onerous labours devolving upon them, and for the production of a volume so universally approved and accepted."

On the motion of E. Parrish, of Philadelphia, the following preamble and resolution were *unanimously* adopted:—

"Whereas, the mutual cultivation of science tends to break down sectional and national distinctions, and to unite all of kindred objects and pursuits in a common bond of friendship and good-will; and

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* The constitution and objects of this Association were explained in our last, under the head of "Reviews."

"Whereas, we have learned of a Conference of the Pharmaceutists and Chemists of Great Britain having been summoned, near the same time as our present meeting, at Newcastle-upon-Tyne, as we believe for purposes similar, if not identical with our own.

"Therefore be it resolved, That we view this movement on the part of our brethren of the mother-country with feelings of satisfaction and encouragement, and invite their friendly co-operation and correspondence in advancing a knowledge of the science and art of pharmacy, and in promoting the elevation of the profession to a position commensurate with the importance and dignity of its objects."

It was further resolved, "That a copy of this resolution, signed by the proper officers of the Association, be transmitted to the President of said Conference of the Pharmaceutists and Chemists of Great Britain by our Corresponding Secretary, who is also directed to solicit an exchange of their public proceedings for those issued by our Association."

On the business of the meeting being concluded, the President adjourned the Association, to meet again on the third Wednesday of September, A.D. 1864, at 3 p.m., in the city of Cincinnati.

GAZETTE.

BANKRUPTS.

Bensley, George David, Wells, Norfolk, chemist.
Fleet, Benjamin, Apollo-buildings North, East-street, Walworth, and Barnet, soda-water manufacturer.
Forster, William Charlton, late of Lower Marsh, Lambeth, agricultural chemist.
Hardwick, William Benjamin, St. James's-road, Holloway, chemist.
Harris, Robert Clabon, Aldershot, chemist.
Hinxman, Henry James, Lee, apothecary.
Hobson, William, Holyland and Elsecar, Yorkshire, chemist.
Leech, Elizabeth, Rochdale, chemist.
Low, William, Lewes, chemist.
Okell, John, Liverpool, chemist.
Willison, William Henry, High-street, Kensington, and Providence-terrace, Earl's-court, Brompton, chemist.
Windross, John, Kingston-upon-Hull, druggist.

PARTNERSHIPS DISSOLVED.

Polden and Cook, Gloucester, chemists.
Voile, T. and E., Skinner-street, Euston-road, and Euston-road, wholesale druggists.

Correspondence

THE PROJECTED BILL OF THE MEDICAL COUNCIL.

Manchester, October 22nd, 1863.

SIR,—The excessive vigilance of your Correspondent who hides his individuality under the assumed name of "Vigil," has led him to discover a mare's nest, whilst pretending to impale me on the horns of a dilemma. Though unfortunately common amongst a certain class, there is nothing so dishonest as for a disputant to attribute words to an opponent which he never uttered,—or, what is as bad, twist his words and attribute to them a strained and unnatural meaning. "Vigil" has done both. He says, "Mr. Slugg seems anxious to soften down the denunciation he had bestowed upon the projected Bill of the Medical Council, but, in his eagerness to do so, commits himself to a positive contradiction. He says, first, 'as the result of riper knowledge on this subject (*compulsory examination*), my views are greatly modified;' and then he immediately adds, 'I do not object, nor have I ever objected, to a compulsory examination,' &c. If Mr. Slugg approves of it now and ever has done, in what respect are his views so greatly modified?" Now this is very unfair. The words "compulsory examination," there used, are not mine; and that I did not mean it, is obvious to any candid reader. The words in my letter on which "Vigil" comments are—"I should not have spoken so strongly against the Bill, had I not laboured under a misconception as to its operation. As the result of riper knowledge *on this subject*, &c." "Vigil" himself distinctly acknowledges, in the first instance, that the object of my denunciation was the *Bill of the Medical Council;* but immediately afterwards attributes another meaning to my words, by adding, in a parenthesis, "compulsory examination," wishing your readers to infer, that in my speech I had denounced the principle of compulsory examination, and that it was in reference to *that* I said my views had changed. I never denounced compulsory examination, and never changed my views concerning it. Everything I have said and done with regard to it has been perfectly consistent from first to last.

The object of the meeting at which I spoke was to consider, not the principle of compulsory examination, but the Bill of the Medical Council. The operation of the Bill was the subject of discussion, and the subject which I denounced. I confess again, I did so under the impression that such operation was intended to reach too far. Riper knowledge and riper reflection have led me to modify my views as to the Bill and the nature of its operation. Such, I grieve to say, is the apathy of educated Druggists with regard to their own interests, that if the Medical Council shall, by Act of Parliament, obtain the power to prevent incompetent persons entering into our profession, I am certain a great boon will be conferred upon its members. I for one shall greatly rejoice, and would do all I could to help them to pass it. Least of all has "the duly-qualified anything to fear;" for even if the Council should obtain power to send down examiners in order to ascertain the competency of those now in business, I repeat it, "the duly-qualified has nothing to fear." My view is, that a man who has received a good education, who has paid a handsome apprenticeship fee, and thoroughly understands his profession, call him Chemist and Druggist, or anything else you like,—for a name is nothing,—ought not to be exposed to competition with tinkers, ostlers, and other uneducated men—be they called Pharmaceutical Chemists, or any other grand name.

Where is my inconsistency—where the dilemma?

"Vigil" says something about "throwing myself down headlong from the platform of my brother Druggists." Being a plain man, I confess my inability to understand flowers of rhetoric. Permit me, however, to jump down from the platform of Brother "Vigil;" still remaining,

Your most obedient servant,
J. T. Slugg.

[Why "*still* remaining," Mr. Slugg? That little adverb implies a certain degree of coldness. These columns are open for free discussion upon trade matters, but we are in no way responsible for the opinions expressed in them. If "Vigil" or anybody else hits you, we cheerfully give you the opportunity of returning the blow; and, however much our opinions may differ from yours, we hope to continue, Yours very truly, Ed. C. & D.]

UNITED SOCIETY OF CHEMISTS AND DRUGGISTS.

Offices—20, New Ormond-street, W.C.
London, Nov. 11th, 1863.

Sir,—Allow me to state that the Executive Committee of this Society have now arranged for a public meeting of the trade to be held at the Society's new Offices, No. 20, New Ormond-street, W.C., on the afternoon of Friday, the 27th inst., for the purpose of protesting against the proposed alterations in the present Medical Act; and the Committee cordially invite the attendance of all those Chemists and Druggists who do not wish to be forcibly dispossessed of their right to compound medicine.

The chair will be taken at half-past three o'clock precisely, by Mr. Alderman Dakin, President of the Society.

I am, Sir,
Yours most obediently,
C. F. Buott, Secretary.

November 10th, 1863.

Sir,—On the recent assembling of the Liverpool Chemists' Association, the President in his opening address considered the second report of the United Society worthy of some remarks, and entertained his audience with his views on the proposed Act of Incorporation.

After sketching the origin of the Pharmaceutical Society, and paying a just tribute to its founders, he generously gave credit to the originators of the United for having the same objects in view, but regretted that, at times, "observations anything but complimentary to the Pharmaceutical Society should have been indulged in by them; and that when the United Society was formed, its intentions and course of procedure were not clearly defined." I regret that this statement was industriously circulated by those whose interest it was to oppose us, notwithstanding the five objects upon which this Society is based were distinctly set forth; being of a trading character, and for the relief of those who had no claim on the Benevolent Fund of the Pharmaceutical Society. Nothing beyond this was intended or desired. It is *we* who have cause to regret observations used against us. We laboured in every way to convince all that it was our last wish to be antagonistic to the Pharmaceutical Society or any educational institute; and in this our desire not to encroach upon the rights of existing corporations, we gave our opponents the only plea they could raise against us—"That we were opposed to education;" and not until we found it utterly impossible to obtain friendly recognition, or even fair commercial advantages, did we relinquish the task of conciliation. The Pharmaceutical has itself only to blame for any unfriendly remarks which may have been offered.

The original and present intention of the United Society is to advance the *trading interest*, leaving science and distinction to the Pharmaceutical. We wish to see every Druggist enjoying equal commercial privileges, but have no desire to interfere with collegiate honours.

"Registration," says the President, "was wanted in 1841 as well as in 1863;" and if he had said, in 1741, he would have spoken the truth; but society did not care for it. Many changes occur in twenty years; and the Druggists who declined to support Mr. Bell in his impractical scheme for turning useful traders into unnecessary semi-scientific professionals, are satisfied that the time has now arrived for making the trade a registered body, without impairing its business capabilities.

If "the Pharmaceutical Society is incomplete through a great number of the supporters of the United Society holding themselves aloof," that is the most convincing proof that it has failed to supply the wants, and lacks the confidence of the trade, and the greatest encouragement to us to persevere, and to avoid the first error, by incorporating *all claiming to be Chemists*, so that we may become a success.

Was the charter granted to the Pharmaceutical Society for the exclusive benefit of those who accepted its provisions in 1841, or for the future public good? No doubt, it has proved advantageous to the little party forming its centre; but what benefit has the public gained? Does the examination of 360 youths in twenty years establish public confidence in the Druggist? And in what way has the trade found in it a protection to its interest? The President instances the exemption from juries as a proof of its power: but that was a trick which, as long as there remains a distinction, will be a disgrace to the Pharmaceutical Society. The idea emanated from the United, and through its exertions alone it became a boon to the members of the Pharmaceutical Society. But where is the power which should be set forth against the unwarrantable assumption of the Medical Council? There never was a greater occasion for it to come forth and defend the interest of the trade. Let us hope the advice of the President will be adopted. "Better late than never;" and at the forthcoming meeting let all sections of the trade unite and put their shoulders to the wheel to accomplish in 1864 that which was wanted in 1841. I am sure the Executive of the United would hail with pleasure such a union, but in its absence will hopefully pursue its onward course alone.

I am, Sir,
Yours, &c.,
ONE OF THE EXECUTIVE.

NOTES AND QUERIES

The British Pharmacopœia.—We are told that the new *Pharmacopœia* will make its appearance about the 1st of December next. Some months ago, we were informed that we might certainly expect to see it in the early part of October.

Pepsine.—(T. W. T.)—See formula given in our January number of the present year, page 17.

"*Ferro-phosphorated Elixir of Calisaya.*"—"A foreign *pharmacien* now in London" writes—"The *pyrophosphate of iron* being an insoluble salt, cannot be dissolved by water or sherry wine, as stated at page 166 of your esteemed Journal for June ultimo. How to prepare, therefore, the elixir in question?"—Mr. Bakes, the author of the formula referred to, most likely intends the soluble pyrophosphate, introduced by Robiquet, to be employed. This is made by dissolving hydrated pyrophosphate of iron in citrate of ammonia, and evaporating to dryness.

Solution of Valerianate of Ammonia.—("Gravity.")—Parrish notices a dilute solution proposed by Pierlot, prepared by dissolving ʒj. of terhydrated valerianic acid in ℥xxxij. of distilled water, saturating with carbonate of ammonia, and dissolving ℈ij. of alcoholic extract of valerian in the mixture. It may be given in doses as high as one or two teaspoonfuls. The ordinary doses of valerianate of ammonia are from two to eight or ten grains.

TRADE REPORT.

London, November 13.

In the market for Chemicals a better business has been done this month : the trade and exporters have purchased with more readiness, and in some instances rather higher prices have been obtained. Tartaric Acid has sold to a fair extent, at 1*s.* 5¼*d.* to 1*s.* 5½*d.* Citric is firmer, at 1*s.* 5*d.* A good business has been done in Oxalic, at 8*d.*, and now 8¼*d.* required. Sal Acetos is in fair demand, at 10½*d.* Chlorate of Potass remains quiet, at 11½*d.* Prussiate of Potass is dull, at 11½*d.* to 11¾*d.* Bichromate is reduced to 7*d.*, and little doing. A good business has been done in Iodine, at 4⅜*d.* to 4½*d.*, with few sellers under the latter price. Sulphate of Quinine sells steadily at 6*s.* 6*d.* for English, and 6*s.* for French. Soda Crystals are scarce, and prices firm, at 92*s.* 6*d.* to 95*s.* ex ship. Ash remains 1⅞*d.* to 2¼*d.* Caustic Soda more in demand ; 60 per cent. at 15*s.* to 15*s.* 6*d.*, and 70 per cent. 18*s.* Cream of Tartar is dull at 110*s.* A large business has been done in Alum at £6 15*s.* Sulphate of Copper remains firm at 31*s.* to 31*s.* 6*d.* Sal Ammoniac is firm at 38*s.* for first, and 36*s.* for second quality. A good business has been done in Sulphate of Ammonia at 13*s.* 6*d.* to 14*s.* 6*d.* Flour of Brimstone is quiet at 11*s.*, and Roll at 9*s.* Linseed Oil has declined on the spot to 41*s.* 6*d.*, and first six months 37*s.* 9*d.* Rape is much lower, but firmer the last day or two. Foreign Brown, 39*s.* 9*d.* to 40*s.* ; and Refined, 42*s.* 9*d.* to 43*s.* Turpentine has continued very dull, and the price of French is now nominal at 67*s.* Petroleum is also much lower, but sales made at 1*s.* 10*d.* to 1*s.* 11*d.* on the spot ; and for December and January delivery, sales made at 1*s.* 9½*d.* Crude is also cheaper ; some sales ex ship last made at £16 10*s.* for Pennsylvanian. Both Pot and Pearl Ashes remain quiet. Refined Saltpetre is 6*d.* dearer, and firm at 41*s.* 6*d.* to 42*s.* cash f.o.b. Rough is dull, but no sellers at lower prices.

The Drug sales have been small during the month ; prices are without material change. Ipecacuanha is, however, much dearer ; last sales on the spot made at 9*s.*, and for Oil 8*s.* Oil of Cassia has advanced to 11*s.* to 11*s.* 3*d.*, and large sales rather under these prices. Oil Aniseed is steady ; sales for arrival made at 6*s.* 4*d.* to 6*s.* 4½*d.* Castor Oil is rather better, middling to good pale selling at 5*d.* to 5¾*d.* Some large parcels of Tinnevelly Senna sold at 4*d.* to 9*d.*, and pods 1*d.* to 1¼*d.* Camphor has declined to £6 ; refined is 1*s.* 9*d.* East India Gums are steady ; sales of Brown Barbary made at 40*s.* Olibanum is 3*s.* to 5*s.* cheaper. Cardamoms are dearer ; good Malabar sold at 6*s.* 6*d.* to 6*s.* 8*d.* Cubebs advanced to 125*s.*, but now quiet at 110*s.* Shellac has declined 5*s.* to 7*s.* 6*d.* Nux Vomica is selling at better prices. Kowrie Gum is 2*s.* to 4*s.* dearer. Gambier is quieter. China Rhubarb is rather more in request. Turmeric is dearer, and more in request. Sticklac is 2*s.* to 4*s.* lower. Turkey Opium sells steadily at 17*s.* 6*d.* to 18*s.* 6*d.* for good.

PRICE CURRENT.

☞ *These quotations are the latest for* ACTUAL SALES *in Mincing Lane. It will be necessary for our retail subscribers to bear in mind that they cannot, as a rule, purchase at the prices quoted, inasmuch as these are the* CASH PRICES IN BULK. *They will, however, be able to form a tolerably correct idea of what they ought to pay.*

	1863.				1862.			
	s.	d.	s	d.	s.	d.	s.	d.
ARGOL, Cape, pr ct.	85	0	..97	6	85	0	100	0
French	40	0	..60	0	30	0	..60	0
Oporto, red	45	0	..47	0	47	0	..47	0
Sicily............	70	0	..75	0	70	0	..80	0
Naples, white.....	65	0	..80	0	65	0	..80	0
Florence, white...	87	6	95	0	90	0	100	0
red....	80	0	..85	0	85	0	..87	6
Bologna, white....	100	0	105	0	110	0	115	0
ARROWROOT, duty 4½ per cwt.								
Bermuda ...per lb.	1	9	.. 2	0	1	2	.. 1	5
St. Vincent........	0	6¼	.. 0	8½	0	4	.. 0	6¾
Jamaica.	0	5½	.. 0	7	0	3½	0	5
Other West India.	0	5½	.. 0	6	0	3¼	0	4½
Brazil............	0	3½	.. 0	4	0	2	0	3
East India........	0	3½	.. 0	4½	0	2	0	2¾
Natal	0	6	.. 0	10	0	3½	0	7½
Sierra Leone......	0	5¼	.. 0	5¾	0	2¾	0	3¼
ASHES....per cwt.								
Pot, Canada, 1st sort	31	0	..31	6	34	6	.. 0	0
Pearl, do. 1st sort.	36	0	.. 0	0	34	6	.. 0	0

	1863.				1862.			
BRIMSTONE,	s.	d.	s.	d.	s.	d.	s.	d.
rough......per ton	135	0	.. 0	0	135	0	.. 0	0
roll...............	175	0	180	0	200	0	220	0
flour..............	220	0	260	0	260	0	280	0
CHEMICALS,								
Acid—Acetic, pr lb	0	3½	.. 0	0	0	4	.. 0	4½
Citric	1	5	.. 0	0	1	7½	0	0
Nitric	0	5	.. 0	5½	0	4½	0	5
Oxalic........	0	8	.. 0	8¼	0	8½	0	9
Sulphuric	0	0⅝	.. 0	0	0	0¾	0	0
Tartaric crystl	1	5¼	.. 1	5½	1	7½	0	0
powdered.	1	6	.. 0	0	1	8	0	0
Alum .....per ton.	135	0	140	0	140	0	145	0
powder	155	0	.. 0	0	0	0	.. 0	0
Ammonia. Crb. lb.	0	5¾	.. 0	6	0	5½	0	6
Sulphate per ton	280	0	300	0	270	0	300	0
Antimony, ore	200	0	230	0	200	0	240	0
crude, per cwt	22	0	..23	0	24	0	..28	0
regulus	40	0	.. 0	0	43	0	..44	0
French star...	39	0	.. 0	0	44	0	.. 0	0
Arsenic, lump....	16	0	..17	0	17	0	..18	6

PRICE CURRENT—*continued.*

	1863.				1862.			
CHEMICALS.	s.	d.	s.	d.	s.	d.	s.	d.
Arsenic powder ..	7	0	..7	6	7	6	..8	0
Bleaching Powder.	9	9	..10	3	9	6	..10	0
Borax, E. I. refind	55	0	..0	0	52	6	..0	0
British........	56	0	..0	0	50	0	..0	0
Calomel....per lb.	2	9	..0	0	2	9	..0	0
Camphor, refined.	1	9	..0	0	3	4	..4	4
Copras. grn. pr. tn.	57	6	..60	0	65	0	..0	0
Crrsiv. Sublmte. lb	1	11	..0	0	1	11	..2	0
Green Emrld. pr.lb	0	0	..0	0	0	9	..0	11
Brunswk. cwt.	0	0	..0	0	14	0	..42	0
Iodine, dry, pr. oz.	0	4⅜	..0	4½	0	5¼	0	5½
Magnesia Crbn. ct.	42	6	..45	0	42	6	..45	0
Calcined, lb...	1	6	..1	8	1	6	..0	0
Minium, red, pr.ct.	21	3	..21	6	22	6	..23	0
orange........	32	0	..33	0	33	0	..34	0
Ptsh. Bichrom. lb.	0	7	..0	0	0	7¾	0	8
Chlorate	0	11½	..0	0	1	2	..0	0
Hydriodate oz.	0	4½	..0	5	0	5½	0	6
Prussiate ..lb.	0	11½	..0	11¾	1	0	..1	0½
red..	1	11	..0	0	2	2	..0	0
Precipit. red pr. lb	2	9	..0	0	2	9	..2	10
white...	2	9	..2	10	2	10	..0	0
Prussian Blue.....	1	0	..1	10	1	6	..1	10
Rose Pink....pr ct.	29	0	..0	0	29	0	..30	0
Sal-Acetos...pr lb.	0	10½	..0	0	0	10½	0	0
Ammoniac, ct.								
British...	36	0	..38	0	36	0	..38	0
Epsom........	8	0	..8	6	8	3	..8	6
Glauber	5	0	..5	6	5	6	..0	0
Soda, Ash, pr deg..	0	1⅞	..0	2¼	0	2⅛	0	0
Bicarbonate..ct.	11	9	..12	3	12	9	..13	0
Crystals, per ton	92	6	..95	0	100	0	102	6
Sgr. Lead, whte, ct.	37	0	..0	0	37	0	..0	0
brown........	26	0	..26	6	25	0	..0	0
Slphte. Quinine oz								
Britsh in bttl.	6	6	..0	0	7	3	..7	6
Foreign	6	0	..0	0	7	3	..0	0
Sulpht. Zinc..cwt.	14	6	..15	0	14	6	..15	0
Verdigris........lb.	0	10½	..1	0	1	2	..1	5
Vermilion, English	2	8	..3	0	2	8	..3	1
China ..	2	0	..2	1	2	3	..2	4
Vtrl. blue or Romn.								
per cwt.	30	0	..31	0	33	0	..35	0
COCHINEAL, pr. lb.								
Honduras, black..	3	6	..4	8	2	8	..4	3
silver...	2	6	..3	6	1	6	..3	6
Mexican, black....	3	6	..3	8	2	8	..3	0
silver ..	3	4	..3	5	2	7	..2	8
Lima	0	0	..0	0	2	9	..3	2
Teneriffe, black ..	3	7	..4	2	2	9	..3	8
silver ..	3	4	...3	7	2	8	..2	9
DRUGS,								
Aloes, Hepatic, ct.	100	0	190	0	130	0	200	0
Socotrine	150	0	280	0	160	0	480	0
Cape, good....	48	0	..52	0	38	0	..46	0
inferior.	30	0	..46	0	20	0	..37	0
Barbadoes.....	50	0	360	0	60	0	380	0
Ambergris, gray.								
per oz..	18	0	..20	0	22	0	..35	0
Angelica Root, ct..	20	0	..35	0	20	0	..35	0
Aniseed, China str.	125	0	..0	0	80	0	..90	0
German, &c.	19	0	..38	0	19	0	..40	0
Balsam Canada, lb	0	11	..1	0	1	3	..0	0
Capivi......	1	3½	..1	5	1	7	..1	8
Peru........	4	9	..4	10	5	0	..5	2
Tolu	3	8	..3	10	4	1	..4	6
Bark Cascarilla ct.	25	0	..40	0	23	0	..40	0
Peru crown & grey								
per lb	0	7	..2	2	1	0	..2	4
Calisaya, flat...	3	6	..3	8	4	0	..4	3
quill....	3	0	..3	4	3	6	..3	9
Carthagena....	1	2	..1	8	1	3	..2	6
Pitayo........	1	8	..2	6	1	10	..2	9
Red	2	6	..8	0	2	6	..6	6
Bay Berries, pr ct..	0	0	..0	0	22	0	..40	0
Bucca Leaves, lb.	0	2½	..1	6	0	2½	1	6
Camomile Flowers	30	0	..75	0	40	0	..80	0
Camphor, China ..	120	0	125	0	320	0	0	0
Canella Alba......	19	0	..38	0	19	0	..40	0
Cantharides, pr lb.	2	6	..2	8	2	11	..3	0
Cardamoms. Mlbar.								
good...........	6	0	..6	8	7	4	..7	8

	1863.				1862.			
DRUGS.	s.	d.	s.	d.	s.	d.	s.	d.
Cardamoms, inferior	4	3	..5	8	6	0	..7	2
Madras..	3	9	..5	4	3	3	..5	10
Ceylon..	4	9	..5	1	4	9	..5	0
Cassia Fistula pr ct.	20	0	..35	0	22	0	..32	0
Castor Oil, 1st pale, lb	0	5¾	..0	6	0	7¼	0	7
second.....	0	4¾	..0	5½	0	6¾	0	7
infr. & dark	0	4¼	..0	4½	0	6¼	0	6
Bombay. in csks.	0	4¼	..0	4¾	0	6	0	6
Castorum	1	0	..20	0	1	0	..26	0
China Root, pr ct.	12	0	..15	0	12	0	..15	0
Coculus Indicus ..	11	0	..13	0	9	0	..12	0
Cod-liver Oil, gal...	6	6	..13	6	4	3	.6	0
Clcynth. apple, lb..	0	7	..1	0	0	8	..1	0
Colombo Rt. pr ct..	50	0	..80	0	15	0	..48	0
Cream Tartar, pr ct.								
French	110	0	..0	0	120	0	..0	0
Venetian	112	6	..0	0	120	0	122	6
grey	100	0	105	0	112	0	115	0
brown	97	6	102	6	105	0	110	0
Croton Seed	50	0	..60	0	45	0	..65	0
Cubebs	110	0	115	0	120	0	125	0
Cummin Seed	26	0	..35	0	36	0	..38	0
Dragon's bld. reed.	200	0	300	0	200	0	320	0
lump...	95	0	260	0	100	0	200	0
Galangal Root....	18	0	..20	0	25	0	..32	0
Gentian Root	18	0	..19	0	20	0	..22	0
Guinea Grains, ...								
per cwt.	80	0	..82	6	47	0	..49	0
Honey, Narbonne.	50	0	..80	0	60	0	..85	0
Cuba	24	0	..40	0	24	0	..36	0
Jamaica	25	0	..63	0	28	0	..70	0
Ipecacuanha, pr.lb.	8	6	.9	0	7	6	..8	0
Isinglass, Brazil...	1	4	..3	11	1	0	..3	7
East India......	0	6	..3	9	0	6	..3	6
West India	3	4	..3	6	3	3	..3	6
Russian........	9	6	..13	0	9	6	..13	0
Jalap	0	10	..4	3	1	9	..5	6
Juniper Berries cwt.								
German & Frnch	8	0	..9	0	9	0	..11	0
Italian	8	0	..10	0	10	0	..12	0
Lmon Juice, pr deg.	0	0½	..0	0	0	0¾	0	0
Liquorice, per cwt.								
Spanish	80	0	..83	0	83	0	..90	0
Italian	80	0	..85	0	85	0	..95	0
Manna, flaky	3	4	..3	6	2	0	..2	6
small	1	6	..0	0	1	6	..0	0
Musk......per oz.	17	0	.30	0	20	0	..28	0
Nux Vomica......	12	6	..18	0	8	0	..8	6
Opium, Turkey ..	18	6	..19	6	18	0	..18	6
Egyptian..	8	0	..15	0	8	6	..13	0
Orris Root, pr cwt.	26	0	..28	0	27	0	..29	0
Pink Root, per lb...	3	0	..3	6	3	0	..3	3
Quassia (bit. wd) ton	150	0	160	0	90	0	110	0
Rhatania Root, lb.	0	8	..2	1	0	9	..1	0
Rhbrb. China, rnd.	1	6	..4	0	2	3	..4	8
flat	1	8	..4	3	2	6	..5	0
Dutch, trmd.	5	6	..6	0	5	0	..5	6
Russian	12	6	..13	0	11	6	..16	0
Saffron, Spanish ..	39	0	..41	0	45	0	..46	0
Salep ....per cwt.	130	0	140	0	140	0	170	0
Sarsaparilla, Lima	0	11	..1	4	0	10	..1	5
Para	0	10	..1	2	0	10	..1	2
Honduras.	0	10	..1	6	0	9	..1	4
Jamaica ..	1	2	..2	4	1	2	..2	4
Sassafras..per cwt.	20	0	..0	0	11	0	..12	0
Scammony. per lb,								
virgin....	30	0	..38	0	28	0	..36	0
second ..	12	0	..23	0	14	0	..24	0
Seneka Root......	3	6	..3	9	4	9	..5	0
Senna, Calcutta ..	0	0	..0	0	0	2	..0	2½
Bombay	0	2	..0	3½	0	2½	0	4
Tinnevelly..	0	3	..1	2	0	4	..1	0½
Alexandria	0	3½	..0	8	0	3½	0	6
Snake Root	3	0	..3	3	2	3	..0	0
Spermaceti, refined	1	0	..1	2	1	0	..1	2
Squills	0	1½	..0	4	0	1	..0	2
Tamarinds, E. Ind.	12	0	..13	6	12	6	..14	0
W.I. per cwt.	14	0	..22	0	17	0	..36	0
Terra Japonica—								
Gambier, cwt ..	23	0	..27	0	26	0	..27	0
Cutch, cwt	25	6	..26	6	27	0	..28	0
Valerian Root, Eng	20	0	..40	0	20	0	..40	0

PRICE CURRENT—*continued.*

	1863.				1862.			
DRUGS.	s.	d.	s.	d.	s.	d.	s.	d.
Vanilla, Mexican lb	20	0	..30	0	25	0	..55	0
Wormseed, pr cwt.	2	0	.. 0	0	2	0	.. 0	0
GUM...... per cwt.								
Ammoniac, drop..	100	0	120	0	100	0	120	0
lump ..	15	0	..65	0	15	0	..70	0
Animi, fine pale ..	220	0	250	0	290	0	320	0
bold amber.	190	0	210	0	220	0	270	0
medium....	160	0	280	0	160	0	180	0
small & dark	100	0	155	0	120	0	160	0
ordinry dark	50	0	..95	0	40	0	..90	0
Arab. E.I.f. palepkd	65	0	..72	0	50	0	..58	0
unsortd, good to f	44	0	..64	0	32	0	..42	0
red and mixed	30	0	..40	0	24	0	..30	0
siftings	15	0	..30	0	18	0	..23	0
Turkey, pkd. gd to f.	120	0	160	0	120	0	180	0
second & infr.	65	0	110	0	48	0	110	0
in sorts	32	0	..50	0	30	0	..42	0
Gedda............	30	0	..33	0	26	0	..28	0
Barbary, white ..	52	0	..58	0	34	0	..40	0
brown ..	38	0	..46	0	28	0	..31	0
Australian....... .	36	0	..38	0	24	0	..30	0
Assafœt. fr. to gd.	35	0	..90	0	40	0	110	0
Benjamin, 1st. qual.	350	0	630	0	400	0	560	0
2nd qual	280	0	300	0	260	0	330	0
3rd ,,	50	0	240	0	60	0	180	0
Copal, Angola red.	85	0	..90	0	100	0	110	0
pale.	85	0	..95	0	95	0	105	0
Benguela....	70	0	..85	0	105	0	130	0
Sierra Lne lb	0	4	.. 1	3	0	9	.. 1	10
Manilla pr ct	30	0	..52	6	20	0	..38	0
Dammar ple. pr ct	36	0	..46	0	38	0	..47	0
Galbanum........	100	0	120	0	100	0	120	0
Gmbge. pkd. pipe	160	0	190	0	140	0	180	0
in sorts.....	90	0	150	0	80	0	110	0
Guaiacum .. pr. lb.	0	6	.. 1	5	0	6	.. 1	6
Kino ....per cwt.	300	0	400	0	260	0	280	0
Kowrie...........	42	0	..54	0	25	0	..26	0
Mstic. pkd. pr lb..	4	6	.. 5	0	5	0	.. 5	3
Myrrh gd & fi pr ct	150	0	170	0	160	0	200	0
sorts........	70	0	130	0	70	0	130	0
Olibanum, pl. drop	76	0	..80	0	54	0	..71	0
ambr & yel.	48	0	..70	0	44	0	..56	0
mixd. & dk.	16	0	..35	0	12	0	..36	0
Senegal	48	0	..50	0	40	0	..46	0
Sandrac..........	77	6	105	0	80	0	110	0
Tragacanth, leaf..	180	0	260	0	180	0	320	0
in sorts.	100	0	130	0	100	0	130	0
OILS......per tun.	£	*s.*	£	*s.*	£	*s.*	£	*s.*
Seal	40	0	..48	0	37	0	..48	0
Sperm, body......	78	0	..80	0	83	0	.. 0	0
Cod...............	55	10	..58	0	46	0	..47	0
Whale, Greenland.	0	0	.. 0	0	0	0	.. 0	0
Sth Sea pale	44	10	..46	0	39	0	..43	0
E. I. Fish...	38	10	.. 0	0	37	10	..38	0
Olive, Galipoli, ton.	59	0	..60	0	60	10	..62	0
Florence, ½-chst.	20	0	..21	0	22	0	.. 0	0
Cocoant. Cochn. tn	47	0	..48	0	57	0	..57	6
Ceylon	45	0	..45	6	53	6	..54	0
Sydney	40	0	..46	0	46	0	..53	6
Ground Nut & Gin.								
Bombay........	39	0	..40	0	49	0	..50	0
Madras	40	0	..42	0	50	0	..50	6
Palm, fine........	38	0	.. 0	0	42	6	..43	0
Linseed	41	6	.. 0	0	41	6	.. 0	0
Rapesd. Engl. pale	42	0	.. 0	0	50	0	.. 0	0
brown.......	40	0	.. 0	0	47	10	.. 0	0
Foreign do ..	42	6	..43	0	50	0	.. 0	0
brown......	39	6	..40	0	48	0	.. 0	0
Lard	44	0	..45	0	49	0	..50	0
Tallow	39	0	..40	0	40	0	..41	0
Rock Crude	17	0	..17	10	18	0	..18	10
OILS, Essential—	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
Almond essen. lb.	19	0	.. 0	0	19	0	.. 0	0
expressed ..	0	0	.. 0	0	1	0	.. 0	0
Aniseed..........	6	3	.. 6	4	5	9	.. 5	11
Bay.......pr cwt.	110	0	120	0	110	0	120	0
Bergamott, pr lb.	7	0	.10	6	5	6	..12	0
Cajeputa, bond, oz.	0	2½	.. 0	2¾	0	1½	0	3
Caraway....pr lb.	4	3	.. 5	6	4	3	.. 6	0
Cassia	11	0	..11	3	9	3	.. 9	6
Cinamon (in b), oz	1	6	.. 3	6	1	4	.. 4	0
Cinnamon Leaf...	0	2	.. 0	4½	0	3	.. 0	4
Citronel.........	0	5	.. 0	5¼	0	6	.. 0	6¼

	1863.				1862.			
OILS.	s.	d.	s.	d.	s.	d.	s.	d.
Clove	0	2	.. 0	4	0	4	0	0
Croton	0	0	.. 0	0	0	3	0	4
Juniper ....per lb.	1	10	.. 3	0	1	10	.. 3	0
Lavender	2	6	.. 4	6	2	6	.. 5	0
Lemon	4	0	.. 9	0	4	0	.. 8	6
Lemongrass, pr oz	0	7½	.. 0	9	0	4	.. 0	6¼
Mace, ex	0	1½	.. 0	2	0	1½	0	2
Neroli............	5	0	.. 7	0	6	0	.. 9	0
Nutmeg	0	1	.. 0	2	0	1½	0	2
Orange ....per lb.	5	0	.. 6	6	5	0	.. 7	0
Otto Roses, per oz	14	0	..23	0	15	0	..24	0
Peppermint, pr lb.								
American	9	0	..15	0	8	6	..13	6
English	34	0	..36	0	33	0	..34	0
Rhodium ..per oz.	3	6	.. 5	6	3	9	.. 6	0
Rosemary..per lb.	1	8	.. 3	0	1	10	.. 3	0
Sassafras	3	6	.. 4	0	3	0	.. 3	6
Spearmint........	5	0	.. 8	6	5	0	..10	0
Spike	0	0	.. 0	0	1	3	.. 1	6
Thyme	1	9	.. 2	3	1	9	.. 2	3
PITCH, Brtsh, pr cwt.	12	0	.. 0	0	8	0	.. 0	0
Swedish	0	0	.. 0	0	10	6	..11	0
SALTPETRE, pr cwt.								
Bngl, 6 p.c. or under	38	0	..38	6	40	0	..41	0
over 6 per cent.	36	6	..37	6	38	0	..39	6
Madras	36	6	..37	6	38	0	..40	0
Bombay..........	34	0	..37	0	36	6	..38	6
British-refined....	41	0	..42	0	43	0	..44	0
Nitrate of Soda ..	15	0	..15	6	13	6	..14	0
SEED, Canary, pr qr.	42	0	..54	0	36	0	..58	0
Caraway, Eng, p. c.	28	0	..34	0	0	0	.. 0	0
German, &c	0	0	.. 0	0	0	0	.. 0	0
Coriander	0	0	.. 0	0	0	0	.. 0	0
East India......	0	0	.. 0	0	0	0	.. 0	0
Hemp	0	0	.. 0	0	0	0	.. 0	0
Linseed, Black Sea	60	0	.. 0	0	58	0	..60	0
Calcutta	62	0	..65	0	63	0	..64	0
Bombay	68	0	..69	0	70	0	.. 0	0
Egyptian	60	0	..62	0	60	0	..62	0
Mustard, brn, p. bhl	9	0	..13	0	0	0	.. 0	0
white..	9	0	..11	0	7	6	.. 9	0
Poppy, E.I. per qr	52	0	.. 0	0	56	0	..57	0
Rape, English	0	0	.. 0	0	0	0	.. 0	0
Danube	60	0	.. 0	0	72	0	..73	0
Calcutta, fine ..	52	0	..53	0	66	0	.. 0	0
Bombay........	62	0	..64	0	68	0	..72	0
Teel, Sesme or Gngy	60	0	..64	0	65	0	..71	6
Cotton ....per ton	150	0	.. 0	0	175	0	180	0
Gnd. Nut Krnels, tn	320	0	.. 0	0	350	0	360	0
SOAP, Lnd. yel. pr ct.	22	0	..36	0	21	0	..36	0
mottled	36	0	..38	0	34	0	..36	0
curd........	50	0	.. 0	0	50	0	.. 0	0
Castile	40	0	..41	0	39	0	..40	0
Marseilles	40	0	..42	0	40	0	..41	6
SOY, China, per gal.	2	1	.. 2	3	2	6	.. 2	8
Japan	0	10	.. 1	0	0	8	.. 0	10
SPONGE, Turk. f. pkd	20	0	..24	0	20	0	..24	0
fair to good	8	0	..18	0	8	0	..18	0
ordinary..	3	0	.. 6	0	3	0	.. 6	0
Bahama ..	0	3	.. 1	3	0	4	.. 1	3
TURPENTINE,								
Rough..per cwt.	0	0	.. 0	0	0	0	.. 0	0
Spirits, French ..	67	0	.. 0	0	0	0	.. 0	0
American, incsks	0	0	0	0	125	0	.. 0	0
WAX, Bees, English	170	0	175	0	172	6	175	0
German	162	6	180	0	175	0	180	0
American	165	0	175	0	160	0	170	0
white fine	0	0	.. 0	0	0	0	0	0
Jamaica	172	6	185	0	170	0	180	0
Gambia	170	0	175	0	175	0	0	0
Mogadore	130	0	155	0	125	0	160	0
East India........	140	0	180	0	140	0	170	0
ditto, bleached..	170	0	240	0	175	0	220	0
vegetable, Japan..	52	0	..72	0	65	0	..82	0
WOOD, DYE, per ton,								
Fustic, Cuba	145	0	160	0	165	0	175	0
Jamaica	130	0	135	0	120	0	.. 0	0
Savanilla	115	0	125	0	100	0	.. 0	0
Zante	0	0	.. 0	0	0	0	.. 0	0
Logwood, Cmpchy	205	0	220	0	195	0	210	0
Honduras	120	0	.. 0	0	145	0	150	0
St. Domingo. ..	90	0	.. 0	0	115	0	120	0
Jamaica........	90	0	..92	6	107	6	.. 0	0

PATENTS

The abridged Specifications of Patents given below are prepared specially for this Journal by Mr. R. A. Brooman, from official copies supplied by the Government, and are therefore the property of the Proprietor of this Journal. Other papers are requested not to reproduce them without acknowledgment:—

70. R. T. and R. Monbeith. *Improvements in the manufacture of dyes from aniline and its analogues.* (A communication.) Dated January 8, 1863.

The patentees claim the production of red and violet colouring matters by the decomposition of hydrochlorate or sulphate of aniline, or its analogues, by heat, whether those substances are used by themselves or mixed with aniline or its analogues, and whether either of the above mixtures is heated alone, or after it has been mixed with sand or any other finely-divided substance as aforesaid. Also the use of salts of ammonia for the purpose described. Also the admixture with the colouring substances (as described) of sand, gelatinous silicic acid, fluoride of calcium, or any other finely-divided substances not liable to act otherwise than mechanically upon the substances employed in the process above described. And also the production of brown colours by the decomposition of salts of aniline, or its analogues, by heat, as above described. Whenever hydrochlorate of aniline or aniline is mentioned, the hydrochlorate of aniline of commerce or aniline of commerce is intended. *Patent completed.*

97. W. Clark. *Improvements in the preparation of green colouring matter.* (A communication.) Dated January 12, 1863.

The inventor claims the preparation of a green colouring matter derived from aniline, which is soluble and suitable for dyeing and printing purposes, by means of a combination of reducing agents, such as hydrates and soluble hyposulphites, acting on acidulated solutions of salt and rosaniline, or on the blue or violet compounds derivable from the same. *Patent completed.*

162. R. A. Brooman. *Improvements in the manufacture of sulphate of soda for conversion into soda and other uses.* (A communication.) Dated January 19, 1863.

When a mixture of coal, sulphuret of iron, and chloride of sodium is heated in the presence of air, sulphate of soda, oxide of iron, and chloride of iron are formed; the proportion of these different bodies varies with the quantities of the substances above named forming the mixture, as also the state of division when used. This invention consists in manufacturing sulphate of soda by reducing to a powder the fuel (charcoal, coal, coke, or other fuel), the natural or artificial sulphuret of iron, and the salt, and in mixing these substances in certain fixed proportions. *Patent completed.*

475. E. T. Hughes. *Improvements in the treatment of colouring matters derived from tar for the purpose of making them applicable for painting.* (A communication.) Dated February 21, 1863.

For obtaining cakes of red, blue, and violet, the inventor takes 15 grammes of white soap, and dissolves it in 100 grammes of hot water, and then mixes with the solution 6 decigrammes of colour previously dissolved in methylitic alcohol, or other solvent. To this mixture he adds 25 grammes of pure alumina in a gelatinous state, and then filters and dries the mixture. These proportions may be varied at discretion; for instead of 6 decigrammes of colour, a large quantity may be used in order to have a greater depth of colour. Instead of the white soap, glycerine and soaps made from oils or grease derived from animal matters may be employed; and instead of the alumina, sulphate of barytes or other metallic or earthy oxide may be used, and thus obtain the means of manufacturing all the colours derived from tar into cakes or pigments. Thus, the colour is dissolved in any of the known solvents, and then mixed in a water bath with vegetable or animal soaps dissolved in the hot or cold state, and precipitating the colour by alumina previously precipitated from alum or sulphate of barytes, or any other kind of salt or metallic or earthy oxide. By these means, and especially by the assistance of an animal matter in a soapy state, the colours are rendered solid and durable, and are applicable for painting. *Patent completed.*